Vol. IV JANUARY, 1914 No. 1

MONTHLY BULLETIN

OF THE

DEPARTMENT OF HEALTH

OF THE

CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

THE IMPORTANCE OF VITAL STATISTICS IN PUBLIC HEALTH WORK

CONDENSED SUMMARY, VITAL STATISTICS, 1913

PUBLISHED MONTHLY BY THE DEPARTMENT OF HEALTH
149 CENTRE STREET
NEW YORK, N. Y.

BOARD OF HEALTH.

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Commissioner of Health and President of the Board.

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MONTHLY BULLETIN
OF THE
Department of Health of the City of New York

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OPINION AND COMMENT.

Announcement has been made that Dr. S. S. Goldwater, for some years superintendent of Mt. Sinai Hospital, has been appointed Commissioner of Health, the appointment to take effect February 1st. On behalf of the entire Department of Health, the Bulletin extends a cordial greeting to the new Commissioner, together with sincere good wishes for a successful administration. Knowing the personnel of the department, we can assure Dr. Goldwater of hearty co-operation in his new duties.

While we regret deeply losing Dr. Biggs as General Medical Officer, we must congratulate the State of New York on its good fortune in securing so able and distinguished a man as Commissioner of Health.

With the December number the Bulletin lost the services of its editor and founder, Mr. Curtis E. Lakeman, who resigned to accept the position of executive secretary of the American Society for the Control of Cancer. Under his able direction, the Bulletin has made for itself a place of great usefulness, not only in the Department of Health, but also, we believe, in the community at large. The policy of the Bulletin will continue unchanged, and it will be our aim to present a readable record of all matters pertaining to the health of the community.

sucks up the fluids on which it feeds. The upper part and sides of the head are mainly occupied by a pair of large compound eyes which lie close together in the male, and wider apart in the female. Some flies possess in addition, three simple eyes set in a triangle on the crown of the head. The antennae are tactile and perhaps olfactory organs, usually well covered with hairs or bristles and situated between the compound eyes. Interiorly are found the brain, air sacs, a large amount of blood, not confined to blood vessels, the oesophagus, the pharyngeal suction pumps and muscles, the salivary duct and gland. The oral lobes are soft cushionlike lips terminating the proboscis. The mouth parts of the house fly are particularly adapted to sucking and not to piercing or biting as is generally supposed. Biting is confined usually to the *stomoxys calcitrans* or stable fly, which somewhat resembles the house fly.

The thorax or middle part is composed of three segments which externally carry a single pair of wings, halteres, and three pairs of legs. The wings are thin and transparent and are traversed by numerous veins, the arrangement of which is different and distinctive in the house fly. The halteres, commonly called balancers or poisers, are placed behind the wings. Each leg is composed of various segments, the lowest carrying a pair of claws, below which are found membranous pads covered on the ventral surfaces with innumerable closely set secreting hairs, by means of which the fly is able to walk in any position on highly polished surfaces. In some species the thorax is covered with a number of large bristles. Internally are found the oesophagus, which passes from the pharyngeal pump, through the neck into the thorax where it divides into two branches, one branch forming the crop-duct and continuing backward into the crop; the other passing directly into the proventriculus which organ is continuous with the ventriculum or chyle stomach.

The abdomen or hindermost division of the body is composed of several segments. In the house fly, there are eight in the male, and nine in the female; the last three segments are much reduced in the male, while in the female they are much larger and form the ovipositor, an organ by means of which the female fly deposits the fertilized eggs. The abdomen of the female fly, in summer, contains numerous white cylindrical eggs, arranged in bundles containing about seventy strings of eggs in various stages of development. These, when fertilized, are discharged through a duct into the ovipositor, by means of which the eggs may be placed in crevices of the substance selected by the fly.

Its Disgusting Life History.

In its development, the house fly passes through four stages:

1—The egg.
2—The larva or maggot stage.
3—The pupa or chrysalis.
4—The "imago" or perfect fly.

The particularly disgusting and important feature of the life history of the fly and the one which more than any other brings it into relation with the spread of disease, is the manner of reproduction. Wherever possible, the fly deposits its eggs in horse manure, decaying animal or vegetable matter and even in the contents of privies. These eggs hatch out in the form of thick whitish maggots, each about one-half of an inch long. The maggot stage is also spoken of as the larva stage; it lasts about five or six days. Then the maggots crawl to a drier place, rest awhile, and finally assume a cylindrical shape, while the outer skin hardens and turns a dark brown. When this transformation has taken place the fly is said to be in the pupa stage. During this stage, various organs undergo changes and development, and, at the end of five or six days, the pupa case bursts and a perfect fly or "imago" emerges.

Some authorities have spoken of "The Fly That Does Not Wipe His Feet." This is hardly accurate for, unfortunately, he does wipe his feet but usually on the food we eat. By sprinkling the contents of privies with lime or some other white powder it has been possible to track flies directly from the privies to food on the kitchen table. During the Spanish-American War, flies were thus tracked from the latrine trenches to the meat hanging in the commissary kitchens. Wherever flies abound, one may be sure to find filth and since filth and disease go hand in hand, a close relation always exists between flies and disease.

Entirely aside from any carriage of disease germs however, the origin of the fly is so disgustingly filthy, that merely from a sense of decency, we should do all in our power to exterminate the pest. The filthy origin of the fly appears to permanently affect the animal's character, for throughout his life he apparently thrives on filth of all kinds.

A single female fly lays from one hundred to one hundred and fifty eggs at a time. During her lifetime, she may lay five or six batches of eggs. We shall not weary the reader with the long arithmetical calculation involved. Suffice to say, however, that a single fly in April may have literally millions of off-spring by September.

Peculiarities of the House-Fly.

A discussion of the fly in its relation to disease, involves a consideration of some of its biological peculiarities. In the first place, the hairs and bristles on the legs, body and antennae of the fly, permit substances of all kinds to adhere, and to be deposited any place the fly may chance to alight. The tremendous fecundity of the fly has also to be considered, for as already stated the average female fly deposits from one hundred to one hundred and fifty eggs at a time and may deposit from five to six batches during its short life, and within barely three weeks the second generation may be depositing eggs.

The digestive system is likewise peculiar. After solid particles of food have been softened by a secretion from the

salivary glands opening into the mouth, the semi-fluid mass is drawn up by the pharyngeal pump through the oesophagus into a small reservoir or crop, before it passes into the proventriculus and finally to the ventriculus. It may remain here for several hours or may be regurgitated by the fly in minute drops. The fly feeds, not only upon our most common foods, such as milk, fruit, bread, butter, sweets and pastry, found upon most every table, but shows an equal fondness for filth of all kinds, such as animal manure, human excrement, decomposing vegetable and animal matter, sputum, pus and foul discharges from wounds or diseased surfaces. It is estimated by numerous observers that the average domestic fly can travel a distance varying from 300 yards to 1,700 yards.

When we consider all of these peculiarities together, it can easily be seen that the average idle and apparently harmless fly, is in reality a dangerous and formidable pest.

What The City Does to Combat The Fly Nuisance.

The public hardly realizes the amount of effective work done by the city authorities to directly combat the fly nuisance. But a moment's consideration will show that the cleaning of streets, the collection and disposal of rubbish and garbage, and the maintenance of elaborate systems of sewerage, all contribute largely to the work against flies.

In the boroughs of Manhattan and Bronx, rubbish and ashes are collected and used to fill in submerged lands at Riker's Island and vicinity. In the Borough of Brooklyn the material is collected and burned in incinerators. Garbage is collected daily and loaded on scows at the various dumps along the river front. These are then towed to Barren Island where the garbage is converted into fertilizers. In addition to the foregoing, the Department of Health, through its offal collectors, disposes of all dead animals, offal and night soil.

It is impossible, however, for the city authorities alone to carry on all the work against flies; much of this still rests with the owners of stables, the owners of establishments where foods are sold, and the housewives. The responsibility of each of these is clear, as can be seen from Section 97, 46, 108, and 116 of the Sanitary Code.

Section 97 of the Sanitary Code relates to the care and sanitation of stables in the built-up portions of the City of New York; it prohibits the use of manure vaults, and demands that all manure and stable refuse not removed daily, shall at least twice in each day be pressed in bales, barrels or boxes and adequately screened or otherwise protected or covered, so that flies cannot have access thereto, and so pressed as to reduce the same to not more than one-third of the original bulk. It further states that it shall not be lawful to remove manure and stable refuse in carts or wagons or to cart the same within the City without a permit from the Board of Health; that said carts and wagons shall be of a construction approved by

the Board and have a permit issued by the Board; that the manure and stable refuse shall not be unloaded or deposited within the city limits except under such conditions mentioned in the permit issued by the Board, and at such docks and places as shall be approved by the Board, and to which a permit in writing shall have previously been granted by the Board.

There are in this borough about eleven such docks located along the shores of the East and North Rivers. Manure and stable refuse are deposited here daily and removed within twenty-four hours by scows, etc., to different parts of the neighboring states, where it is used for fertilizing purposes. There are few, if any, violations of this section of the Code.

Section 46 of the Sanitary Code states that no food except fruit and vegetables that are peeled, pared or cooked before consumption, shall be kept, sold or offered for sale, or be displayed or transported unless protected from dust, dirt, flies or other contamination. The term food as herein used includes every article of food and every beverage used by man, and all confectionery.

Section 108 of the Sanitary Code requires that all ashes, garbage and liquid refuse that may accumulate within thirty-six hours, be placed in separate receptacles (which receptacles shall not be filled within four inches of the top) and kept within the premises until the proper time for removal, and shall then be placed in the area or within the stoop line, fence or other enclosure in front of any building and not upon the sidewalk and shall there remain until such materials or substances are removed by the Department of Street Cleaning; that any receptacle containing garbage or liquid substance which shall be placed outside of a building in the area, or within the stoop line, fence or other enclosure shall be covered and kept covered until such removal as aforesaid.

Section 116 states that it shall be the duty of every owner, lessee, contractor, or other person having the management and control of any lot or parcel of land in the City of New York, to keep and preserve the same at all times, clean, inoffensive and free, and clear of any water which may gather thereon; and to provide and maintain around or in front of any lot which is sunken, excavated or below the grade of the sidewalk adjacent thereto, a proper fence to protect persons from falling therein. The section also provides that no person shall throw or deposit in or upon any lot any garbage, refuse or other offensive material.

What Citizens Generally Can Do.

All who are interested in combating the fly nuisance can help in the work by insisting on the observance of the above regulations, and by calling the attention of the Department of Health to any persistent violations which come to their notice.

It is to the housewife, however, that we must look for the most valuable part of the work against flies, and if we can judge by previous experiences, we need but to arouse her to the im-

portance of the matter, to secure enthusiastic and effective cooperation. The following simple rules have been formulated for her guidance:

1—Allow no garbage, soiled newspapers, trash or dirt of any kind to accumulate in the cellar, area or yard.

2—Keep all drains clean and unobstructed.

3—Have a covered garbage can and wash it daily with a strong solution of washing soda. Remove the garbage as often as required.

4—Cover all windows and doors with wire netting.

5—Keep the kitchen clean and do not allow food of any kind to remain uncovered, particularly milk, puddings and custards, as bacteria multiply rapidly in such foods. Use a covered sugar bowl, and keep all cakes, pastry and sweets of any kind covered, for flies are very fond of sugar.

6—Do not allow vegetable or fruit parings, or tea leaves to remain in the kitchen sink or have soiled kitchen towels or table napkins lying around.

7—Remove all food and soiled dishes from the dining room table after meals. Wash the dishes promptly.

8—Keep the ice box clean and free from odors and the door always tightly closed.

9—See that the plumbing is in good condition and have the toilets clean and well flushed out.

10—Empty dirty water from the wash basins, slop jars, etc., in the bed rooms.

11—Do not allow baby's soiled diapers to lie around, but wash them out promptly.

12—If cuspidors are used, empty them daily and wash with a strong solution of washing soda and allow some of the solution to remain in the cuspidor.

13—**In the Sick-Room:** Wash the patient daily and do not allow any discharges to accumulate on the surface of the body. Remove bed linen and towels immediately after they are soiled with discharges or secretions from the body. Keep the sputum cups and basins covered, and remove all vessels and slop jars after they have been used by the patient. Place a cover over all glasses containing milk, drinks of any kind, or medicine, and do not allow food to remain in the room after the patient has finished eating. Patients afflicted with skin diseases, in which there are discharges or crusts, or with diseases of the eye where there are discharges, should be protected by mosquito netting draped over the bed so that it will not touch the patient or interfere with his comfort.

RULES AND REGULATIONS GOVERNING THE PRODUCTION, HANDLING, AND SALE OF MILK AND CREAM IN THE CITY OF NEW YORK.

The following revised Rules and Regulations governing the production and handling of milk and cream sold in the City of New York were adopted by the Board of Health at its regular meeting, Tuesday, March 31st, 1914, to take effect June 1st, 1914:

Extracts from the Sanitary Code of The City of New York.

Sec. 52. No person shall have at any place where milk, butter or cheese is kept for sale, nor shall at any place sell, deliver, or offer, or have for sale, or keep for use, nor shall any person bring or send to said city any unwholesome, watered or adulterated milk, or milk known as "swill-milk," or milk from cows or other animals that for the most part have been kept in stables or that have been fed in whole or in part on swill, or milk from sick or diseased cows or other animals, or any butter or cheese made from any such milk, or any unwholesome butter or cheese.

Sec. 53. No milk which is watered, adulterated, reduced or changed in any respect by the addition of water or other substance, or by the removal of cream, shall be brought into the City of New York, or held, kept, sold or offered for sale at any place in said city; nor shall any one keep, have, sell or offer for sale in the said city any such milk.

The term "adulterated milk," when so used in this code, means:

First—Milk containing more than eighty-eight and one-half per cent. of water or fluids.

Second—Milk containing less than eleven and one-half per cent. of milk solids.

Third—Milk containing less than three per cent. of fats.

Fourth—Milk drawn from animals within fifteen days before or five days after parturition.

Fifth—Milk drawn from animals fed on distillery waste or any substance in a state of fermentation or putrefaction, or on any unwholesome food.

Sixth—Milk drawn from cows kept in a crowded or unhealthy condition.

Seventh—Milk from which any part of the cream has been removed.

Eighth—Milk which has been diluted with water or any other fluid, or to which has been added, or into which has been introduced, any foreign substance whatever.

Ninth—Milk the temperature of which is higher than 50 degrees Fahrenheit, or which contains an excessive number of bacteria.

Tenth—Milk produced in violation of the rules and regulations adopted by the Board of Health.

The provisions of this section shall not be applicable however, to modified milk held or offered for sale under permits therefor from the Board of Health, pursuant to the rules and regulations of said Board.

Sec. 54. Any milk found to be adulterated, which has been brought into the City of New York or is held or offered for sale in said city, may be seized and destroyed by any inspector or other officer of this Department authorized to inspect same.

Sec. 55. No condensed milk which is adulterated shall be brought into the City of New York or held, kept, sold or offered for sale at any place in said city, nor shall any one have, keep, sell or offer for sale in said city any such condensed milk. The term "adulterated," when used in this section, refers to condensed milk in which the amount of fat is less than twenty-five per centum of the milk solids contained therein, or to which any foreign substance whatever has been added, excepting sugars, as in preserved milks.

The provisions of this section shall not be applicable to condensed skimmed milk held or offered for sale under permits therefor issued by the Board of Health and pursuant to the rules and regulations of said Board.

Sec. 56. No milk or cream shall be held, kept, offered for sale or sold and delivered in the City of New York under either or any of the designations known as Grade A, B, or C, or any of the subdivisions thereof, or any of the designations Condensed Skimmed Milk, Condensed or Concentrated Milk, or Modified Milk, without a permit in writing therefor from the Board of Health, subject to the conditions thereof.

By the term "modified milk" is meant milk of any subdivision of the classification known as "Grade A; for Infants and Children," which has been changed by the addition of water, sugar of milk, or other substance intended to render the milk suitable for infant feeding.

The provisions of this section shall not apply to milk or cream, except "modified milk," when said milk or cream is entirely consumed on the premises; nor to condensed milk or condensed skimmed milk when contained in hermetically sealed cans. The permit shall specify the grade of the milk or cream which the holder of the permit is authorized to keep, sell, offer for sale or deliver.

Sec. 56a. All milk or cream held, kept, offered for sale or sold and delivered in the City of New York shall be so held, kept, offered for sale or sold and delivered

under either or any of the following grades or designations and under no other, and in accordance with such rules and regulations as may be adopted by the Board of Health, namely:

Grade A. For Infants and Children.
1. Certified or guaranteed milk or cream.
2. Inspected milk or cream (raw).
3. Selected milk or cream (pasteurized).

Grade B. For Adults.
1. Pasteurized milk or cream.

Grade C. For cooking and Manufacturing Purposes Only.
Milk or cream not conforming to the requirements of any of the subdivisions of Grade A or Grade B, and which has been pasteurized according to the rules and regulations of the Board of Health.

The provisions of this section shall not apply to buttermilk or to milk products commonly known as Kumyss, Matzoon, Zoolak, dried milk or milk powder, or to other similar preparations, or to modified milk.

Sec. 56b. The rules and regulations governing the sale of dipped or loose milk or cream are hereby made a part hereof, and a copy of such rules and regulations shall be posted and kept posted in a conspicuous place where said milk or cream as aforesaid is sold.

Sec. 57. No cream which is adulterated shall be brought into the City of New York or held, kept, sold or offered for sale in said city, nor shall any one keep, have, sell or offer for sale in said city any such cream. The term "cream" means that portion of milk represented in milk fat which rises to the surface of milk on standing or is separated from it by centrifugal force. The term "adulterated" when used in this section, refers to cream to which any foreign substance whatever has been added, or which has been made to appear better than it really is, or which contains less than 18 per cent. of butter fat.

The provision of this section shall apply to all cream products and preparations such as sour cream, smeteny, homo or milk curds.

Sec. 183. It shall be the duty of all persons having in their possession bottles, cans or other receptacles containing milk or cream, which are used in the transportation or delivery of milk or cream, to clean or cause them to be cleaned immediately upon emptying.

No person shall use or cause or allow to be used any receptacle which is used in the transportation and delivery of milk or cream for any purpose whatsoever other than the holding of milk or cream; nor shall any person receive or have in his possession any such receptacle which has not been washed after holding milk or cream or which is unclean in any way.

CLASSIFICATION AND DEFINITION OF MILK AND CREAM SOLD IN THE CITY OF NEW YORK.

In accordance with Section 56a of the Sanitary Code, all milk or cream sold in the City of New York shall be sold only under one of the following designations:

Grades of Milk or cream which may be sold in the City of New York	Definition	Tuberculin Test	Bacterial Content	Scores of dairies producing	Time of delivery within	Bottling	Labeling	Pasteurization
GRADE A:								
Guaranteed Milk of Cream	Guaranteed milk or cream is milk or cream produced at farms holding permits therefor from the Board of Health and produced and handled in accordance with the minimum requirements, rules and regulations as herein set forth.	1. Only such cows shall be admitted to the herd as have not reacted to a diagnostic injection of tuberculin. 2. All cows shall be tested annually with tuberculin and all reacting animals shall be excluded from the herd.	Guaranteed milk shall not contain more than 10,000 bacteria per c. c. and cream more than 50,000 bacteria per c. c. when delivered to the consumer, or at any time prior to such delivery.	Equip....35 Methods..58 Total..93	36 hours	Milk shall be delivered to consumer only in sealed bottles which have been sealed at the dairy.	Caps of bottles shall be white and shall contain the words Grade A in black letters in large type with the designation as to the subdivision to which it belongs.	

CLASSIFICATION AND DEFINITION OF MILK AND CREAM SOLD IN THE CITY OF NEW YORK—Continued.

Grades of milk or cream which may be sold in the City of New York	Definition	Tuberculin Test	Bacterial Content	Scores of dairies producing	Time of delivery within	Bottling	Labeling	Pasteurization
GRADE A:								
Certified Milk or Cream	Certified milk or cream is milk or cream certified by a milk commission appointed by the Medical Society of the County of New York or the Medical Society of the County of Kings, as being produced under the supervision and in conformity with the requirements of that commission as laid down for certified milk or cream and sold under a permit therefor issued by the Board of Health, the requirements of which shall not be less than those for guaranteed milk.	Same as "Guaranteed Milk."	Same as "Guaranteed Milk."	Equip....35 Methods..58 Total..93	36 hours.	Same as "Guaranteed Milk."	Same as "Guaranteed Milk."	

CLASSIFICATION AND DEFINITION OF MILK AND CREAM SOLD IN THE CITY OF NEW YORK—Continued.

Grades of milk or cream which may be sold in the City of New York	Definition	Tuberculin Test	Bacterial Content	Scores of dairies producing	Time of delivery within	Bottling	Labeling	Pasteurization
GRADE A: Inspected Milk or Cream (Raw).	Inspected milk or cream (raw) is milk or cream produced at farms holding permits therefor from the the Board of Health, and produced and handled in accordance with the minimum requirements, rules and regulations as herein set forth.	Same as "Guaranteed Milk."	Inspected milk (raw) shall not contain more than 60,000 bacteria per c. c. and cream more than 300,000 bacteria per c. c. when delivered to the consumer or at any time prior to such delivery.	Equip....25 Methods.50 Total..75	36 hours.	Unless otherwise specified in the permit this milk or cream shall be delivered to the consumer only in bottles.	Same as "Guaranteed Milk."	
Selected Milk or Cream (Pasteurized).	Selected milk or cream (pasteurized) is milk or cream handled and sold by dealers holding permits therefor from the Board of Health, and produced and handled in accordance with the requirements, rules and regulations as herein set forth.	No Test.	Selected Milk (pasteurized) shall not contain more than 50,000 bacteria per c. c. and Selected Cream (Pasteurized) more than 250,000 bacteria per c. c. when delivered to the consumer or at any time after pasteurization and prior to such delivery. No milk supply averaging more than 200,000 bacteria per c. c. shall be pasteurized for sale under this desig-	Equip....20 Methods.47 Total..67	36 hours with the exception of "sour cream."	Same as "Inspected Milk or Cream (Raw)."	Caps of bottles shall be white and shall contain the words Grade A in black letters in large type, date and hour when pasteurization was completed; place where pasteurization was performed; name of the person, firm or corporation offering for sale, selling and delivering same.	Only such milk or cream shall be regarded as pasteurized as has been subjected to a process in which the temperature and exposure conform to one of the following: 155° 6 min. 152° 12 min. 148° 18 min. 145° 20 min. 140° 30 min.

CLASSIFICATION AND DEFINITION OF MILK AND CREAM SOLD IN THE CITY OF NEW YORK—Continued.

Grades of milk or cream which may be sold in the City of New York	Definition	Tuberculin Test	Bacterial Content	Scores of dairies producing	Time of delivery within	Bottling	Labeling	Pasteurization
GRADE B: Milk or Cream (Pasteurized).	Pasteurized milk or cream is milk or cream produced and handled in accordance with the minimum requirements, rules and regulations herein set forth and which has been pasteurized in accordance with the rules and regulations of the Department of Health for pasteurization.	No tuberculin test required.	No milk under this grade shall contain more than 100,000 bacteria per c. c. and no cream shall contain more than 500,000 bacteria per c. c. when delivered to the consumer or at any time after pasteurization and prior to such delivery. No milk supply averaging more than 1,000,000 bacteria per c. c. shall be pasteurized in this City for sale under this designation during the months of October to March inclusive, or more than 2,000,000 bacteria per c. c. during the months of April to September inclusive. No milk supply	Equip....20 Methods . 35 Total . . 55	36 hours.	Same as "Inspected Milk or Cream (Raw)."	Caps of bottles and tags affixed to cans, shall be white and marked "Grade B" in bright green letters in large type; date and hour when pasteurization was completed; place where pasteurization was performed; name of the person, firm or corporation offering for sale, selling and delivering same.	Same as "Selected Milk or Cream (Pasteurized)."

CLASSIFICATION AND DEFINITION OF MILK AND CREAM SOLD IN THE CITY OF NEW YORK—Concluded.

Grades of milk or cream which may be sold in the City of New York	Definition	Tuberculin Test	Bacterial Content	Scores of dairies producing	Time of delivery within	Bottling	Labeling	Pasteurization
			averaging more than 300,000 bacteria per c. c. shall be pasteurized outside of this City for sale under this designation during the months of October to March inclusive, or more than 500,000 bacteria per c. c. during the months of April to September inclusive.					
GRADE C: Milk or Cream (Pasteurized).	Grade C milk or cream, is milk or cream not conforming to the requirements of any of the subdivisions of Grade A or Grade B, and which has been pasteurized according to the rules and regulations of the Board of Health.	No tuberculin test required.		Equip.... 15 Methods . 25 Total . . 40	48 hours.		Caps of bottles and tags affixed to cans, shall be white and shall contain in red the words "Grade C" in large type and "for cooking" in plainly visible type and cans shall have properly sealed metal collars, painted red on necks.	Same as "Selected Milk or Cream (Pasteurized)."

GENERAL RULES AND REGULATIONS.

Permits.

1—A permit for the sale of milk or cream, of any grade or designation, may be granted only after an application has been made in writing on the special blank provided for the purpose.

2—A permit for the sale of milk or cream of any grade or designation may be granted only after the premises where it is proposed to care for and handle such milk shall have been rendered clean and sanitary.

3—Every permit for the sale of milk or cream, shall expire on the last day of December of the year in which it is granted.

4—No wagon shall be used for the transportation of milk, condensed milk or cream, without a permit from the Board of Health. A wagon permit for the sale or transportation of milk, condensed milk or cream, shall be conspicuously displayed on the outside of the wagon so that it may be readily seen from the street. The said wagon shall bear the name of the Company and the person engaged in the sale of said milk, condensed milk or cream, and the business address of same; in letters of at least 3 inches in height, and conspicuously placed.

5—Every permit for the sale of milk or cream, of any grade or designation, in a store, shall be so conspicuously placed that it may be readily seen at all times.

6—All stores selling or keeping for sale milk, condensed milk or cream, will be frequently inspected and scored by a system adopted by the Department of Health, and the revocation of the permit of any store may ensue if the score is found repeatedly below the required standard.

7—The revocation of a permit may ensue for violation of any of the rules and regulations of the Department of Health.

8—The revocation of a permit may ensue upon repeated conviction of the holder thereof of the violation of any section of the Sanitary Code.

9—No milk or cream shall be held, sold or offered for sale in the City of New York, which is produced on dairies, which do not score 40 per cent. or over on the official dairy score cards, approved by the Board of Health.

Sanitary Requirements.

1—Milk, condensed milk, or cream, shall not be kept for sale nor stored in any stable, or room used for sleeping purposes, or in any room if in communication with such stable or room, or with watercloset apartments, except when such watercloset apartments are enclosed by a vestibule; the doors of the same being provided with a spring or other device to keep them closed at all times; the door of watercloset opening toward said toilet, and the door of vestibule opening toward said store.

2—Milk, condensed milk, or cream, shall not be sold or stored in any room which is dark, poorly ventilated, or dirty, or in which rubbish or useless material is allowed to accumulate, or in which there are offensive odors.

3—The vessels which contain milk, condensed milk, or cream, while on sale, must be so protected by suitable covers and vessels so placed in the store that the milk, condensed milk, or cream, will not become contaminated by dust, dirt or flies.

4—Cans containing milk, condensed milk, or cream, shall not be allowed to stand on the sidewalk or outside of the store doors.

5—Milk, condensed milk, or cream, must not be transferred from cans to bottles or other vessels on the streets, at ferries, or at railroad depots.

6—Vessels in which milk, condensed milk, or cream, is kept for sale, shall be kept either in a milk tub, properly iced, or in a clean ice-box or refrigerator in which these or similar articles of food are stored.

7—All containers in which milk, condensed milk, or cream, is handled, transported, or sold, must be thoroughly cleaned before filling, but such cleaning shall not be done, nor shall any containers be filled in any stable or in any room used for sleeping purposes, or in any room having connection with such stable or rooms, or with watercloset apartments, except when such watercloset apartments are enclosed by a vestibule; the doors of the same being provided with a spring or other device to keep them closed at all times; the door of watercloset opening toward said toilet, and the door of vestibule opening toward said store.

8—All dippers, measures or other utensils used in the handling of milk, condensed milk or cream, must be kept clean while in use, and must be thoroughly cleaned with hot water and soapsuds directly after each day's use.

9—The ice-box or ice-tub in which milk, condensed milk, or cream, is kept, must be maintained in a thoroughly clean condition, and must be scrubbed at such times as may be directed by the Department of Health.

10—The overflow pipe from the ice-box in which milk, condensed milk, or cream, is kept, must not be directly connected with the drain pipe or sewer, but must discharge into a properly trapped, sewer-connected, water-supplied open sink.

11—No person having a contagious disease, or caring for or coming in contact with any person having a contagious disease, shall handle milk.

Labeling.

Each container or receptacle used for bringing milk or cream into the City of New York, shall bear a tag stating, if shipped from a creamery, the location of the said creamery and the date of shipment; or if shipped directly from a dairy, the location of the said dairy and the date of shipment.

All milk or cream brought into the City of New York to be pasteurized shall have a tag affixed to each and every can, indicating the place of shipment, date of shipment, and the words "to be pasteurized at (stating location of pasteurizing plants)."

As soon as the contents of such container or receptacle are sold, or before the said container is returned or otherwise disposed of, or leaves the possession of the dealer, the tag thereon shall be removed and kept on file in the store where such milk or cream has been sold for a period of two months thereafter for inspection by the Department of Health.

Every wholesale dealer in the City of New York shall keep a record in his main office in the said city, which shall show from which place or places milk or cream, delivered by him daily to retail stores in the City of New York, has been received, and to whom delivered, and the said record shall be kept for a period of two months, for inspection by the Department of Health, and shall be readily accessible to the inspectors of the said Department at all times.

Pasteurization.

1—All containers in which pasteurized milk or cream is delivered shall be plainly labeled "Pasteurized." Labels must also bear the date and hours between which pasteurization was completed, the place where pasteurization was performed, and the name of the person, firm or corporation, offering for sale, selling, and delivering same.

2—Only such milk or cream shall be regarded as pasteurized as has been subjected to a process in which the temperature and exposure conform to one of the follwing:

No less than 155 degrees F. for at least 6 minutes.
No less than 152 degrees F. for at least 12 minutes.
No less than 148 degrees F. for at least 18 minutes.
No less than 145 degrees F. for at least 20 minutes.
No less than 140 degrees F. for at least 30 minutes.

3—The milk or cream after pasteurization must be at once cooled and placed in clean containers, and the containers immediately closed.

4—Milk or cream which has been heated in any degree will not be permitted to be sold in the City of New York unless the heating conforms with the requirements of the Department of Health for the pasteurization of milk or cream.

5—Permits will not be granted to pasteurize milk or cream unless all forms of apparatus connected with said pasteurizing plants, have been approved by the Board of Health.

6—No milk or cream shall be labeled "Pasteurized" in the City of New York unless said milk or cream has been pasteurized under permit from the Board of Health and subject to the rules and regulations thereof.

7—No milk or cream shall be pasteurized a second time.

8—No pasteurized milk or cream shall be sold in bottles unless bottling has been performed at the place of pasteurization.

9—Each plant for the pasteurization of milk or cream shall be equipped with suitable automatic time and temperature recording devices, indicating to what temperature the milk or cream has been heated, and the length of time it was subjected to such heat, as well as the time when such record was made.

10—No milk or cream, which after proper pasteurization would not comply with the minimum requirements for "Milk or Cream, Grade A, Pasteurized" as set forth in these rules and regulations, or in the Sanitary Code, shall be received in rooms or in apparatus where "Grade A Pasteurized Milk or Cream" is handled or treated.

RULES AND REGULATIONS FOR THE SALE OF DIPPED MILK AND CREAM IN STORES IN THE CITY OF NEW YORK.

General Requirements.

1—Milk, condensed milk, or cream, shall not be kept for sale nor stored in any stable, or room, used for sleeping purposes, or in any room if in communication with such stable or room, or with watercloset apartments, except when such watercloset apartments are enclosed by a vestibule; the doors of the same being provided with a spring or other device to keep them closed at all times; the door of watercloset opening toward said toilet, and the door of vestibule opening toward said store.

2—The term "domestic purposes" shall be held to apply to rooms used for sleeping purposes or for cooking purposes other than the preparation of the midday meal.

3—Milk or cream shall not be handled or sold in any room which is unduly crowded.

4—Milk or cream shall not be dipped from cans stored in a room in which butter or cheese is manufactured.

5—Milk or cream may be stored in a cooling or refrigerating room, or ice chest, the construction of which has been approved by the Department.

6—No milk or cream shall be dipped from cans stored in a milk booth.

7—Milk shall be kept at a temperature of 50 degrees Fahrenheit, or below, at all times.

Equipment.

1—Rooms in which milk or cream is handled or sold shall be well lighted.

2—The floors, walls and ceilings shall be smooth and must be kept clean and sanitary.

3—All windows and doors shall be properly screened.

4—An adequate supply of hot water shall be provided for the washing of utensils.

5—A sufficient number of properly constructed ice tubs or other adequate refrigerating facilities, for cans of milk or cream, shall be provided.

6—All utensils used for dipped milk or cream shall be of the seamless sanitary type, heavily tinned.

Methods.

1—No milk or cream shall be dipped from cans stored in any room in which rubbish or dirty material is allowed to accumulate, or in which there are offensive odors.

2—All cans or other receptacles used for milk or cream shall be cleaned thoroughly upon emptying.

3—The cans from which milk or cream is dipped shall be packed in ice, and shall be kept covered at all times except when the milk or cream is being actually dipped therefrom.

4—After each day's use all utensils shall be thoroughly cleaned with hot water and soda, and then with boiling water.

5—All utensils used for dipped milk or cream shall be kept clean.

6—The ice tubs in which milk or cream is stored shall be painted inside and outside, and shall be kept clean at all times.

7—A separate dipper shall be provided for each can from which the supply is being served and such dipper shall remain in the can between dippings until all the milk in the can has been disposed of.

8—All goods sold in milk stores must be either in unbroken packages, or must be so placed, protected and handled that no dust or odors therefrom can injuriously affect the milk.

9—Dry sweeping and dusting in rooms in which milk or cream is dispensed is prohibited.

10—The tags on cans of milk or cream must be kept on file in the store for at least two months, for inspection by the Department of Health.

11—The attendants shall wear clean, washable outer clothing.

12—Only such persons shall be employed as are free from infectious disease which may be transmitted in the handling of milk.

RULES AND REGULATIONS FOR THE USE OF A SEDIMENT TESTER.

1—A sediment tester approved by the Department of Health of the City of New York must be used in all creameries shipping milk to the City of New York.

2—All milk received at any creamery so shipping milk as aforesaid must be tested thereat by the person having the

management and control of such creamery, at least once a week, the results of such test to be posted in a conspicuous place in the creamery and duplicates of such test forwarded to the Department of Health at the end of each month.

3—A photograph of the gauge established by the Board of Health of the City of New York must be used as a standard in the creameries herein referred to in determining whether milk contains excessive sediment.

4—Where the maximum of sediment is shown to habitually exist in milk tested as aforesaid at any creamery it will constitute sufficient cause to rate the milk as Grade C, with the right of said Board to exclude such milk from the City of New York when such conditions continue.

5—The farmer will strain his milk before shipping.

RULES AND REGULATIONS GOVERNING THE SALE OF CONDENSED SKIMMED MILK.

Definition.

Condensed skimmed milk is milk in which the butter fat is less than twenty-five (25) per cent. of the total milk solids.

Regulations.

The cans containing such milk shall be colored a bright blue and shall bear the words "Condensed Skimmed Milk" in block letters at least two inches high and two inches wide with a space of at least one-half inch between any two letters. The milk shall be delivered to the person to whom sold, in can or cans of the character required in this regulation.

SUMMARY OF VITAL STATISTICS FOR MONTH OF FEBRUARY, 1914.

The number of deaths recorded during the month of February, 1914, was 6,636, with a death rate of 15.50 per 1,000 of the population, as against 6,798 deaths and a rate of 16.50 in the corresponding month of 1913, an absolute decrease of 162 deaths and of one point in the rate, equivalent to a relative decrease of 428 deaths. If the increase in population be taken into consideration, and comparison made with the mortality of February, 1913, it will be found that the following causes showed a decreased mortality, whooping cough 10, diphtheria and croup 7, influenza 18, pulmonary tuberculosis 42, other forms of tuberculosis 26, cancer 44, cerebro-spinal meningitis 10, acute bronchitis 26, lobar pneumonia 166, broncho pneumonia 143, other respiratory diseases 15, diarrhoel diseases under five years of age 17, appendicitis 20, Bright's disease and nephritis 81, violent deaths 45; the mortality from typhoid fever was exactly the same. The following causes showed an increase in the mortality, measles 9, scarlet fever 8, organic heart diseases 85, cirrhosis of the liver 8, congenital debility and malformations 39, other causes 67. The decrease in the total mortality was chiefly due to the diminished prevalence of influenza as compared with that of February, 1913. This is clearly shown in the total decrease in the number of deaths from the respiratory diseases, which amounted to 350 deaths. Another noteworthy factor of the month's mortality was a decrease in the number of deaths reported from cancer. The increase in the number of deaths from organic heart diseases was almost counterbalanced by a decrease in that from Bright's disease and nephritis. These two causes of death are very often given conjoined on the certificates of death, and the preference is given as a rule to the organic heart trouble, so that it is advisable always in discussing mortality from organic heart diseases to take into consideration the mortality from chronic organic disease of the kidney.

Viewed from the point of age grouping, it will be found that there was a decrease in every age group with the exception of that of over sixty-five years of age; there was a decrease of 94 deaths in infants under one year of age and a total of 255 deaths at all ages under five years; between five and fifteen there were 24, fifteen and twenty-five 53, twenty-five and forty-five 89, forty-five and sixty-five 68 less deaths, whilst at sixty-five years and over there were 61 more deaths reported.

There were reported 108 deaths of nonresidents, which if deducted from the total of all deaths would give a death rate for the City of 15.25 per 1,000.

The number of births recorded during the month was 10,789, an increase of 438 over the figures of February, 1913.

The number of marriages recorded was 4,495 as against 3,676, an increase of 819.

POPULATION, MARRIAGES, BIRTHS AND DEATHS, FEBRUARY, 1914.

Boroughs	Estimated Population† Bureau of the Census	Estimated Population July 1, 1914	Certificates Received and Tabulated			Rate per 1,000 Based on Department Estimate			Corrected Death Rate *
			Marriages	B'ths	D'ths**	Marriages	B'ths	D'ths	
Manhattan..	2,481,997	2,538,606	2,834	5,137	3,287	14.56	26.40	16.88	16.65
The Bronx..	535,877	641,980	302	1,151	676	6.14	23.39	13.74	12.92
Brooklyn.. .	1,818,128	1,916,655	1,236	3,680	2,138	8.41	25.05	14.55	14.96
Queens.....	340,773	387,444	163	624	367	5.49	21.00	12.36	13.94
Richmond...	94,544	99,186	60	177	168	7.89	23.26	22.08	19.19
City of N. Y.	5,271,319	5,583,871	4,495	10,789	6,636	10.50	25.20	15.50	.....

Boroughs		Death Rate February, 1913 for Comparison.
	Manhattan.....17.39	
	The Bronx.....16.44	
	Brooklyn.....15 95	
	Queens.....13.08	
	Richmond.....17.55	
	City of N. Y.....16.50	

* The death-rate of each Borough is corrected by inclusion of the deaths of its residents in other Boroughs, and exclusion of deaths of residents of other Boroughs within its boundaries.

† The estimate of the Bureau of the Census is based upon the arithmetical method, that of the Department of Health upon the geometrical method of determining the increase in population for post-censal years.

** Includes 108 deaths of non-residents of the City, which, if deducted, would give a death rate for the City of 15.25 per 1,000.

DEATHS ACCORDING TO AGE GROUPS, FEBRUARY, 1914.

Boroughs	All Ages	Under 1 Year	1 Year and under 2	Under 5 Years	5–15 Years	15–25 Years	25–45 Years	45–65 Years	65 Years and over	Colored	Chinese
Manhattan.	3,240	522	164	824	100	166	680	878	592	151	6
The Bronx.	638	85	20	132	24	44	146	167	125	7	..
Brooklyn...	2,198	318	68	469	79	115	437	569	529	56	2
Queens.....	414	66	22	99	12	16	80	106	102	9	..
Richmond..	146	16	3	22	7	6	23	35	53	4	..
Cityof N.Y.	6,636	1,007	277	1,546	221	347	1,366	1,755	1,401	237	8

REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

FEBRUARY, 1914.

	Manhattan		The Bronx		Brooklyn		Queens		Richmond		City of New York	
	Feb. 1914	Feb. 1913	Feb. 1914	Feb. 1913	Feb. 1914	Feb. 1913	Feb. 1914	Feb. 1913	Feb. 1914	Feb. 1913	Feb. 1914	Feb. 1913
Total, all causes	3,240	3,303	638	676	2,198	2,304	414	394	146	121	6,636	6,798
1. Typhoid Fever	6	7	3	2	9	7	..	1	..	..	18	17
3. Malarial Fever	..	1	..	..	..	1	..	..	1	1	1	3
4. Smallpox	..	..	..	..	..	..	..	..	..	..	..	..
5. Measles	36	23	4	4	12	7	1	2	..	6	53	42
6. Scarlet Fever	43	17	5	7	12	28	4	3	1	..	65	55
7. Whooping Cough	10	17	2	2	3	6	2	1	..	..	17	26
8. Diphtheria and Croup	81	63	25	19	53	72	6	12	2	1	167	167
9. Influenza	18	19	8	13	22	33	3	1	1	1	52	67
10. Asiatic Cholera	..	..	..	..	..	..	..	..	..	..	..	..
11. Cholera Nostras	..	..	..	..	..	..	..	..	..	..	..	..
12. Other Epidemic Diseases	33	28	6	2	11	12	1	..	..	..	51	42
13. Tuberculosis Pulmonalis	404	421	80	72	226	239	39	35	16	9	765	776
14. Tuberculosis Meningitis	39	44	2	10	19	23	7	2	1	1	68	80
15. Other forms of Tuberculosis	29	38	4	5	16	17	5	2	..	1	54	63
16. Cancer, Malignant Tumor	164	187	38	45	89	100	27	18	6	4	324	354
17. Simple Meningitis	8	11	2	3	15	8	..	2	..	..	25	24
Of which												
17a. Cerebro-Spinal Meningitis	3	5	1	1	9	3	..	1	..	..	..	10
18. Apoplexy, and Softening of the Brain	38	49	8	8	39	25	9	2	4	4	98	88
19. Organic Heart Diseases	437	362	106	100	373	325	56	64	27	28	999	879
20. Acute Bronchitis	27	31	4	3	24	43	4	5	1	1	60	83
21. Chronic Bronchitis	6	5	2	1	9	7	..	2	1	1	18	16
22. Pneumonia (exc. Broncho Pneumonia)	304	371	66	79	217	278	41	40	14	9	642	777
22a. Broncho Pneumonia	227	295	27	54	168	187	29	33	9	11	460	580
23. Other Respiratory Diseases	20	24	5	3	12	22	3	4	..	..	40	53
24. Diseases of the Stomach (Cancer excepted)	24	22	2	3	13	9	1	1	..	1	40	39
25. Diarrhoeal Diseases (under 5 years)	67	68	10	18	37	42	8	6	1	1	123	135
26. Appendicitis and Typhilitis	24	19	10	4	18	15	6	4	1	..	59	38
Hernia, Intestinal Obstruction	31	20	2	6	17	20	4	5	..	..	54	51
28. Cirrhosis of Liver	35	34	5	2	27	26	12	6	1	1	80	69
29. Bright's Disease and Nephritis	232	254	38	64	163	203	38	22	21	8	492	551
30. Diseases of Women (not Cancer)	9	10	4	2	8	7	..	4	..	1	21	24
31. Puerperal Septicaemia	10	15	5	3	8	10	3	4	..	..	26	32
32. Other Puerperal Diseases	26	15	4	3	13	13	1	3	1	2	45	36
33. Congenital Debility and Malformations	204	162	35	28	116	111	28	27	3	6	386	334
34. Old Age	34	32	3	3	9	18	5	7	1	2	52	62
35. Violent Deaths	136	163	21	20	96	103	15	17	9	3	277	306
a. Sunstroke	..	..	..	..	..	..	..	..	..	..	..	..
b. Other Accidents	129	150	21	19	88	97	15	16	9	2	262	284
c. Homicide	7	13	..	1	8	6	..	1	..	1	15	22
36. Suicide	38	32	8	5	7	17	5	6	..	2	58	60
37. All other causes	438	440	94	83	336	270	51	53	24	16	943	844
38. Ill-defined causes	2	4	..	..	1	..	..	..	..	..	3	4

REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, FEBRUARY, 1914.

BOROUGH OF MANHATTAN.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	154.0	9,750	63.0	..	..	1	1	....	3	....	1	3	23	6
2	81.0	933	11.5	..	..	..	..	....	....	1	....	....	4	....
3	95.0	1,915	20.2	..	..	..	..	....	....	....	....	....	2	....
4	83.0	21,336	257.1	..	..	..	..	1	1	2	4	1	30	12
5	168.0	5,666	33.7	..	..	..	..	1	3	2	1	....	13	1
6	86.0	19,670	228.7	..	..	2	..	....	11	4	5	1	42	10
7	198.0	102,101	515.6	..	..	..	5	3	8	16	13	....	109	42
8	183.0	33,182	181.4	..	..	..	..	1	5	1	8	5	50	16
9	322.0	64,909	201.6	1	..	1	1	2	9	12	12	4	117	29
10	110.0	66,439	604.0	..	..	1	4	1	7	8	4	....	78	20
11	196.0	136,548	696.7	..	..	2	3	4	7	7	7	1	78	27
12 e	1,019.0	205,130	201.3	..	..	6	1	9	34	23	17	8	266	97
12 c	1,738.0	332,692	191.4	..	..	1	1	7	42	42	16	8	393	78
12 w	1,106.0	103,532	93.6	..	..	1	6	1	20	22	5	2	208	28
12 n	2,291.0	165,294	72.1	..	..	..	2	3	11	17	6	2	140	22
13	107.0	64,651	604.3	..	..	1	4	6	4	8	3	1	71	34
14	96.0	38,321	399.3	..	..	1	..	3	15	2	4	....	61	19
15	198.0	30,584	154.5	..	..	..	..	2	5	1	4	....	33	7
16	349.0	55,926	160.2	1	..	..	1	....	16	8	4	1	88	9
17	331.0	172,334	520.6	2	..	4	2	8	15	22	23	7	201	72
18	450.0	62,821	139.6	..	..	4	1	4	15	7	13	6	152	68
19	1,481.0	292,950	197.7	..	..	9	5	14	66	41	41	12	491	118
20	444.0	73,308	165.1	1	..	..	3	3	26	14	3	1	134	15
21	411.0	62,345	151.7	..	..	2	..	3	20	16	5	5	111	28
22	1,529.0	209,154	136.8	1	..	..	3	5	61	28	28	5	345	66
Total..	13,226.0	2,331,491	176.3	6	..	36	43	81	404	304	227	73	3,240	824

BOROUGH OF THE BRONX.

23	4,267.0	268,880	63.0	..	..	2	4	18	52	39	14	9	380	72
24	22,255.8	162,062	7.3	3	..	2	1	7	28	27	13	4	258	60
Total..	26,522.8	430,942	16.2	3	..	4	5	25	80	66	27	13	638	132

BOROUGH OF BROOKLYN.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	233.0	21,851	93.8	..	..	..	..	1	4	2	1	....	33	3
2	97.7	6,894	70.6	..	..	..	..	....	1	1	1	....	9	1
3	161.4	15,910	98.6	..	..	..	..	1	6	5	2	1	36	8
4	111.3	10,477	94.1	..	..	..	..	....	4	1	....	1	18	3
5	119.4	19,401	162.5	..	..	..	..	3	5	4	3	....	34	12
6	302.9	46,437	153.3	..	..	4	..	2	9	9	12	2	76	21
7	458.5	44,037	96.0	..	..	..	..	....	4	7	2	....	60	8
8	1,843.2	82,687	44.9	1	..	..	2	6	20	14	9	3	124	30
9	623.6	50,501	81.0	..	..	..	1	2	10	10	8	....	94	17
10	318.7	41,238	129.4	..	..	1	..	3	6	10	4	1	72	16
11	252.6	21,659	85.7	..	..	..	..	....	8	2	8	3	45	12
12	663.1	29,262	44.1	..	..	..	..	1	7	10	7	....	57	14
13	230.3	30,091	130.7	..	..	..	..	2	3	2	1	1	33	11
14	282.6	33,329	117.9	..	..	..	..	2	5	1	8	3	54	26
15	244.8	35,887	146.6	1	..	..	..	....	6	8	1	2	39	7
16	244.8	68,244	278.7	..	..	1	..	....	3	8	3	....	64	17
17	823.3	70,346	85.5	..	..	..	2	1	9	10	5	1	96	22
18	873.0	35,708	40.9	..	..	1	1	1	10	5	5	....	52	12
19	413.8	44,860	108.4	..	..	..	..	3	6	7	5	2	69	13
20	461.4	27,463	59.5	1	..	1	..	2	3	4	6	2	58	11
21	483.2	78,741	163.0	..	..	..	..	2	5	8	7	1	85	18
22	1,361.6	81,283	59.7	3	..	1	1	1	10	14	6	4	106	17
23	736.0	65,561	89.1	..	..	1	..	2	7	8	4	1	84	9
24	1,198.5	80,466	67.2	..	..	..	..	2	8	11	10	3	102	19
25	567.8	63,597	112.0	1	..	..	1	1	9	5	2	....	73	8
26	3,590.2	177,963	49.5	1	..	1	2	7	14	13	15	4	182	43
27	400.7	76,000	189.6	..	..	..	..	2	12	6	9	....	65	18
28	884.4	77,451	87.6	..	..	..	..	1	14	8	4	....	107	16
29	3,800.0	72,351	19.0	..	..	..	2	4	4	8	4	2	98	23
30	5,401.1	76,406	14.1	1	..	1	..	1	6	10	10	1	97	20
31	6,312.3	30,988	4.9	..	..	..	..	....	7	3	3	3	48	9
32	5,479.5	17,419	3.2	..	..	..	..	....	1	3	3	2	28	5
Total.	38,977.8	1,634,508	41.9	9	..	12	12	53	226	217	168	43	2,198	469

BOROUGH OF QUEENS.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	4,650.0	61,763	13.3	..	..	..	..	4	7	17	8	..	99	26
2	14,700.0	105,219	7.2	..	..	..	3	..	19	9	14	6	141	37
3	22,000.0	37,171	1.7	..	..	..	1	1	3	5	2	..	54	11
4	36,600.0	67,412	1.8	..	..	1	..	..	7	10	4	4	98	19
5	3,770.0	12,476	3.3	..	..	..	..	1	3	..	1	..	22	6
Total..	81,720.0	284,041	3.5	..	..	1	4	6	39	41	29	10	414	99

BOROUGH OF RICHMOND.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	3,340.0	27,201	...	..	..	..	..	..	7	6	3	..	56	9
2	4,130.0	16,871	...	..	..	..	1	1	5	2	5	..	36	5
3	10,050.0	19,812	...	..	..	..	..	..	2	..	..	..	21	1
4	8,180.0	10,662	...	..	..	..	..	..	1	3	1	..	17	5
5	10,900.0	11,423	...	..	..	..	..	1	1	3	..	1	16	2
Total..	36,600.0	85,969	...	..	..	..	1	2	16	14	9	1	146	22

INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, during Months ending Feb. 28, 1913, and Feb. 28, 1914.

	Manhattan		The Bronx		Brooklyn		Queens		Richmond		New York	
	1913	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913	1914
Typhoid Fever	34	37	4	9	36	25	4	2	0	2	78	75
Smallpox	4	2	0	0	1	0	0	0	0	0	5	2
Measles	821	1,140	368	170	584	751	200	122	196	7	2,169	2,190
Scarlet Fever	462	545	169	214	659	453	104	128	43	28	1,437	1,368
Whooping Cough	80	102	33	54	129	84	10	15	10	3	262	258
Diphtheria	514	796	234	224	588	534	97	66	16	22	1,449	1,642
Leprosy	0	0	0	0	0	0	0	0	0	0	0	0
Mumps	127	263	25	26	50	170	3	29	20	2	225	490
German Measles	205	44	66	11	133	19	42	4	2	7	448	85
Chickenpox	194	524	73	145	401	375	57	49	20	63	745	1,156
Glanders	0	0	0	0	0	0	0	0	0	0	0	0
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0
Rabies	0	0	0	0	0	0	0	0	0	0	0	0
Tetanus	0	1	0	0	0	0	0	0	0	0	0	1
Tuberculosis	1,098	936	176	167	523	367	68	68	18	27	1,883	1,565
Syphilis	459	835	73	71	94	131	8	17	4	16	638	1,070
Gonorrhoea	371	433	31	0	76	2	3	0	1	0	482	435
Chancroid	37	24	0	0	13	0	1	0	0	0	51	24
Cerebro-Spinal Meningitis	8	10	2	2	8	10	0	0	0	0	18	22
Piliomyelitis	3	9	0	0	1	2	1	0	0	0	5	11
Total	4,417	5,701	1,254	1,093	3,296	2,923	598	500	330	177	9,895	10,394

MONTHLY METEOROLOGICAL SUMMARY.

FEBRUARY, 1914

Day	Temperature Degrees Fahrenheit			Moisture			Wind			Actual Hours Sunshine
	Max.	Min.	Mean	Relative Humidity	Depth in Inches Rain	Depth in Inches Snow	Av'ge H'rly Vel. Miles	Prevailing Direct'n	Max. Vel. Miles	
S 1	45	38	42	47	0	0	10.5	W	23 W	9.7
M 2	40	30	35	52	0	0	6.0	NW	14 W	10.1
T 3	51	36	44	82	0	0	4.1	S	10 SW	4.3
W 4	53	33	43	66	0	0	6.1	NW	12 NW	8.5
T 5	35	28	32	57	0	0	6.2	N	10 NE	2.5
F 6	36	26	31	81	.35	0.3	9.1	NE	15 NE	0
S 7	47	30	38	70	.15	0	8.5	W	21 W	3.9
S 8	30	23	26	44	0	0	11.5	W	18 W	7.1
M 9	27	12	20	48	0	0	11.3	W	23 W	10.4
T 10	37	21	29	69	†.05	0.5	6.8	SW	12 W	3.8
W 11	21	2	12	60	0	0	10.0	NW	18 NW	5.9
T 12	10	..	4	44	0	0	13.7	NW	21 NW	10.6
F 13	26	..	12	58	†.29	1.6	7.7	N	16 NW	5.3
S 14	34	17	26	73	†1.59	8.1	13.8	NW	24 NW	2.7
S 15	22	12	17	48	0	0	8.7	NW	14 NW	10.7
M 16	23	12	18	62	†.34	5.2	7.8	NW	17 NW	4.1
T 17	24	13	18	68	†.01	0.1	8.1	W	16 W	7.8
W 18	28	22	25	75	0	0	3.8	N	5 W	1.1
T 19	32	25	28	85	.47	0.7	4.3	N	8 N	0
F 20	26	14	20	58	0	0	7.8	N	11 N	4.4
S 21	25	10	18	46	0	0	5.8	NW	9 N	10.0
S 22	36	17	26	58	0	0	6.4	SW	11 NW	5.1
M 23	25	8	16	53	†.07	0.9	8.2	N	13 NW	0
T 24	15	2	8	46	†.01	0.1	9.8	N	18 N	9.5
W 25	26	1	14	47	0	0	6.4	NW	12 NW	11.1
T 26	44	16	30	40	0	0	4.5	W	7 W	11.1
F 27	49	31	40	36	0	0	4.8	W	6 SW	9.2
S 28	49	31	40	57	0	0	3.2	SE	7 S	5.5
Month Mean	32.7	18.1	25.4	58	Total 3.33	Total 17.5	7.7	Prevailing W	Maximum 24 NW	Total 174.4

NOTE—In rain column † stands for melted snow water.

DIRECTORY OF THE DEPARTMENT OF HEALTH.

Headquarters, S. W. corner Centre and Walker Streets, Manhattan.

Office Hours—9 a. m. to 5 p. m. Saturdays, 9 a. m. to 12 m.

Telephone—6280 Franklin.

BOROUGH OFFICES.

Borough of Manhattan....Centre and Walker Streets.....Telephone 6280 Franklin.
Borough of The Bronx....3731 Third Avenue.....Telephone 1975 Tremont.
Borough of Brooklyn.....Flatbush Ave. and Willoughby St...Telephone 4720 Main.
Borough of Queens.....372-374 Fulton St., Jamaica, L. I....Telephone 1200 Jamaica.
Borough of Richmond.....514-516 Bay St., Stapleton, S. I....Telephone 440 Tompkinsville.

LABORATORIES.

Diagnosis Laboratory, Centre and Walker Streets. Telephone, 6280 Franklin.

Serological Laboratory, Centre and Walker Streets. Telephone, 6280 Franklin.

Research Laboratory. **Chemical Laboratory.**

Vaccine Laboratory. **Drug Laboratory.**

Foot of East Sixteenth Street. Telephone 1600 Stuyvesant.

INFANTS' MILK STATIONS.

Manhattan.

1. 172 East 3d Street
2. 513 East 11th Street
3. 281 Avenue A
4. 240 East 28th Street
5. 225 East 107th Street
6. 241 East 40th Street
7. 174 Eldridge Street
8. Vanderbilt Clinic
9. 326 East 11th Street
10. 114 Thompson Street
11. 315 East 112th Street
12. 244 Mulberry Street
13. 508 West 47th Street
14. 78 Ninth Avenue
15. 421 East 74th Street
16. 205 East 96th Street
17. 209 Stanton Street
18. 2287 First Avenue
19. 108 Cherry Street
20. 122 Mulberry Street
21. 207 Division Street
22. 73 Cannon Street
23. 110 Suffolk Street
24. 96 Monroe Street
25. 251 Monroe Street
26. 289 Tenth Avenue
27. 74 Allen Street

The Bronx.

1. 511 East 149th Street
2. 1354 Webster Avenue.

Brooklyn.

1. 268 South 2d Street
2. 660 Fourth Avenue
3. 208 Hoyt Street
4. 176 Hudson Avenue
5. 2346 Pacific Street
6. 184 Fourth Avenue
7. 359 Manhattan Avenue
8. 49 Carroll Street
9. 69 Johnson Avenue
10. 233 Suydam Street
11. 329 Osborne Street
12. 126 Dupont Street
13. 651 Manhattan Avenue
14. 185 Bedford Avenue
15. 296 Bushwick Avenue
16. 994 Flushing Avenue
17. 176 Nassau Street
18. 129 Osborn Street
19. 698 Henry Street
20. 552 Sutter Avenue
21. 167 Hopkins Street
22. 604 Park Avenue
23. 239 Graham Avenue
24. 49 Amboy Street

Queens.

1. 114 Fulton Avenue, Astoria, L. I.

Richmond.

1. 689 Bay Street, Stapleton, S. I.

TUBERCULOSIS CLINICS.

Manhattan.

West Side Clinic, 307 West 33d Street. Telephone 3471 Murray Hill.
East Side Clinic, 111 East 10th Street. Telephone 5586 Orchard.
Middle East Side Clinic, 229 East 57th Street. Telephone 5246 Plaza.
Harlem Italian Clinic, 420 East 116th Street. Telephone 2375 Harlem.
Southern Italian Clinic, 22 Vandam Street. Telephone 412 Spring.
Day Camp, Ferryboat "Middletown," foot East 91st Street. Telephone 2957 Lenox.

TUBERCULOSIS CLINICS—Continued.

The Bronx.

Northern Clinic, St. Pauls Place and 3d Avenue. Telephone 1975 Tremont.
Southern Clinic, 493 East 139th Street. Telephone 5702 Melrose.

Brooklyn.

Main Clinic, Fleet and Willoughby Streets. Telephone 4720 Main.
Germantown Clinic, 55 Sumner Avenue. Telephone 3228 Williamsburg.
Brownsville Clinic, 64 Pennsylvania Avenue. Telephone 2732 E. N. Y.
Eastern Dist. Clinic, 306 S. 5th Street, Williamsburg. Telephone 1293 Williamsburg.
Day Camp, Ferryboat "Rutherford," foot of Fulton Street. Telephone 1530 Main.

Queens.

Jamaica Clinic, 10 Union Avenue, Jamaica. Telephone 1386 Jamaica.

Richmond.

Richmond Clinic, Bay and Elizabeth Streets, Stapleton. Telephone 1558 Tompkins.

CLINICS FOR SCHOOL CHILDREN.

Hours: 2—5 P. M. Saturdays, 9—12 M.

Manhattan.

Gouverneur Slip. Telephone 2916 Orchard.
Pleasant Avenue and 118th Street. Telephone 972 Harlem.
164 Second Avenue. Telephone 2081 Orchard.
449 East 121st Street. (Dental only.) Telephone 3230 Harlem.
P. S. 144, Hester and Allen Streets. Telephone 5960 Orchard.
P. S. 21, 222 Mott Street.

Brooklyn.

330 Throop Avenue, Brooklyn. Telephone 5379 Williamsburg.
124 Lawrence Street. Telephone 5623 Main.
1249 Herkimer Street. Telephone 2684 East New York.

The Bronx—580 East 169th Street. Telephone 2558 Tremont.

DIAGNOSTIC CLINICS FOR VENEREAL DISEASES.

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Centre and Walker Streets. Week days, 9 to 10 a. m.
307 West 33d Street. Wednesdays, 8 to 9 p. m.

Brooklyn.

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CLINIC FOR THE PASTEUR TREATMENT OF RABIES.

Manhattan.

Center and Walker Streets. Week days, 1 to 4 p. m.

Brooklyn.

Fleet and Willoughby Streets. Week days, 10 a. m. to 1 p. m.
Sundays and Holidays (for Manhattan cases only) 10 a. m. to 12 m.

The Bronx—Third Avenue and St. Paul's Place. Daily including Sundays and Holidays, 11 a. m. to 1 p. m.

Queens—Cases attend Manhattan or Brooklyn Clinics.

Richmond—Cases attend Manhattan Clinics.

HOSPITALS.

Manhattan.

Willard Parker Hospital. Foot of East 16th Street. Telephone 1600 Stuyvesant.

The Bronx.

Riverside Hospital. North Brother Island. Telephone 4000 Melrose.

Brooklyn.

Kingston Avenue Hospital. Kingston Ave. and Fenimore St. Tel. 4400 Flatbush.

TUBERCULOSIS HOSPITAL ADMISSION BUREAU.

Maintained by the Department of Health, the Department of Public Charities, and Bellevue and Allied Hospitals, 426 First Avenue. Telephone 8667 Madison Square. Hours 9 a. m. to 5 p. m.

SANATORIUM FOR TUBERCULOSIS.

OTISVILLE, ORANGE COUNTY, N. Y. (via Erie Railroad from Jersey City). Telephone 13 Otisville.

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Vol. IV MARCH, 1914 No. 3

MONTHLY BULLETIN

OF THE

DEPARTMENT OF HEALTH

OF THE

CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

THE FILTHY FLY

RULES AND REGULATIONS GOVERNING THE PRODUCTION, HANDLING, AND SALE OF MILK AND CREAM

PUBLISHED MONTHLY BY THE DEPARTMENT OF HEALTH
149 CENTRE STREET
NEW YORK, N. Y.

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MONTHLY BULLETIN
OF THE
Department of Health of the City of New York
All communications relating to the publications of the Department of Health should be addressed to the Bureau of Public Health Education, 139 Centre Street, New York.

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Vol. IV. NEW YORK, SEPTEMBER, 1914. No. 9

LABORATORY WORK IN HEALTH ADMINISTRATION.

By
WILLIAM H. PARK, M.D.,
Director.

That the City of New York has the distinction of possessing the oldest, and in the scope of its present work, the most active municipal bacteriological laboratory in the world is probably known to very few of its citizens apart from those who have occasion to call for its services. That this lack of knowledge is in part due to the location of the main laboratory building cannot be doubted. Situated as it is at the extreme eastern part of the city (on the East River at Sixteenth Street) surrounded by the contagious disease hospitals of the Department of Health and reached directly only by antiquated horse cars, this branch of the Health Department occupies a position of "splendid isolation" not possessed by any other public building.

The Monthly Bulletin, March 1911, contains a brief history of the Laboratory as well as a description of its work up to that time. The extension of the laboratory since then is the chief reason for preparing the present article; in order that those who are interested in the subject—Prevention and Treatment of Disease—may have some definite conception of what part the Research Laboratory has taken in this work.

The great progress in scientific medicine during the last half century has been largely due to the work of laboratories. Through the perfection in microscopic technique, many species of man's most deadly enemies have been revealed to him, while through the production of artificial media suitable for the growth of these species, their method of development has been successfully studied. Moreover through animal experimentation it has been possible to investigate the effect of the growth and reproduction of these minute organisms on the body function, as well as the method of transmission from one living being to another.

As a corollary to the knowledge, that the majority of the acute diseases affecting animal and man are caused by some variety of micro-organism, a massive literature on the subject of the natural

Deaths of Infants Under One Year, According to Principal Cause.

	New Zealand—1907		City of New York—1907	
	Deaths	Per 1,000 Births	Deaths	Per 1,000 Births
Diarrhoeal Diseases....	557	22	5,335	44
Congenital Debility....	663	26	5,387	44
Respiratory Diseases...	269	11	3,627	30
All Others.....	739	29	2,908	24
	2,228	88	17,257	142

A study of this table at once shows that New York City in 1907 had a much greater infant death rate from diarrhoeal, respiratory and congenital diseases than New Zealand. The disproportion between the rates for respiratory diseases is particularly striking and undoubtedly due to favorable climatic conditions in the latter country.

To anyone familiar with the statistics of infant mortality it is clear that New Zealand must enjoy certain natural advantages over other parts of the civilized world. In considering what these may be, it is well to remember that New Zealand is composed of two large islands, and one smaller one lying in the South Pacific Ocean between 33 degrees to 53 degrees south latitude. Compared to the United States, this would stretch from the southern boundary of California to a point within about 100 miles of the southern boundary of Alaska. Inasmuch as the islands are quite narrow, the surrounding ocean gives marked stability to the climate; the mean summer temperature ranges from 58 degrees to 68 degrees Fahr., at the two ends of the island group and in winter from 40 degrees to 50 degrees F. The soil is fertile and the land is rich in mineral resources. The people are intelligent, progressive and prosperous and there is little real poverty. Slums, such as are found in the large cities in this country, are practically unknown.

That other factors have been at work, however, is evident from the marked reduction which has taken place, in the past seven years; from the year, in other words, which marks the inauguration of the work of the Society for the Health of Women and Children. This society was organized in 1907 by Dr. F. Truby King, Medical Superintendent of the Government Hospital at Dunedin, ably assisted by the former Governor, Lord Plunkett. In addition, Lady Plunkett rendered important aid both in organizing the society and by lecturing, demonstrating and personally helping the mothers and babies. The work was greatly facilitated by the almost perfect registration of all births and deaths occuring in the colony.

The work of this Society consists in:

1. Publication and distribution of pamphlets instructing mothers in the care of the baby, and the weekly publication in newspapers of a column entitled "Our Babies," in which advice is given relating to the care of children.
2. District visiting.
3. The maintenance of a unique baby hospital where not only sick babies are treated but where poorly nourished babies and their mothers may be held under observation for several days so that proper methods of feeding may be advised.
4. Classes of instruction for expectant mothers and for young girls.

The wonderful results obtained have been largely due to the educational campaign. Through the "Baby" columns in the newspapers, an expectant mother learns of the existence of the Society, and is able to place herself in communication with the nurse in whose district she resides. She receives from the nurse instructions in the hygiene of pregnancy and the care of infants. She learns how to care for herself, what food to eat, and what to avoid; the kind and amount of exercise suitable for her, the most comfortable way to clothe herself. This instruction, not only does much to insure a healthful pregnancy and normal labor, but diminishes the possibility of a premature or stillborn infant. The expectant mother is made to understand the necessity of consulting a physician and engaging him to attend her during confinement; the necessity of having frequent examinations of urine made, lest she disregard some kidney complication against which proper precaution should be taken. Such a mother appreciates the importance of breast feeding and is not likely to try any method of artificial feeding, unless she is absolutely unable to nurse her child. She has, moreover, learned the hygiene of lactation, and knows how to properly care for herself and her offspring.

While much of this work has been done in New York City through the Infants' Milk Stations, most of the efforts have been directed toward the care and hygiene of infants and the prevention of diarrhoeal diseases. Recent analyses of the infant death rate show that a large proportion of deaths are due to congenital diseases, a group of diseases whose rate has remained practically stationary. Judging by the results of the interesting experiment discussed in Dr. Sobel's paper (page 160), the next important step in infant welfare in this city must be the development of prenatal care. Certainly, if our remote colleagues in New Zealand have been able to halve their infant death rate in a few years, we should strive to do the same. True, we will always have a somewhat higher rate, owing to the difference in climate and in social and economic conditions, but making due allowances for these factors, our present rates are still far too high. Why not try for a rate of 75 by the year 1920!

IMPORTANCE OF PRENATAL SUPERVISION IN COMBATING INFANT MORTALITY.

By

JACOB SOBEL, M. D.,

Chief, Division Infants' Milk Stations, Bureau of Child Hygiene.

The Role of Congenital Diseases in Infant Mortality.

Sanitarians the world over have come to realize that any further appreciable reduction in infant mortality must come through concerted effort directed against deaths from the congenital diseases, which are increasing annually, and which claim about three-quarters of the thirty-seven per cent. of children that die during the first month, and nearly one-third of all children who die during the first year. In this City during the past ten years, the number of deaths under one year of age from diarrhoeal, respiratory and contagious diseases, and all other causes except congenital diseases, has declined. The number of deaths from congenital diseases has increased from 4,740 in 1903 to 5,495 in 1913, while the death rate from these diseases during 1911, 1912 and 1913, has been 39.2, 40.4 and 40.7 respectively, or in other words, practically stationary. In fact, of all the disease groups causing infant deaths, congenital diseases at present occupies the non-enviable first place, superseding diarrhoeal diseases which for many years was the leader. It has been estimated that of all deaths due to congenital diseases in New York City—prematurity, congenital debility, convulsions, malformations, injuries at birth—about thirty per cent. die on the first day of life, and about fifty per cent. during the first week, while in the registration area of the United States eighty per cent. of all deaths due to these diseases occur during the first month of life; furthermore, statistics show that of all children dying during the first month of life in the registration area of the United States, almost two-thirds die during the first week, and about two-fifths on the first day. It is clear that such deaths bear no relation to hygienic or dietetic errors, and that this mortality must be attributed to conditions arising before, at, or directly after birth. This being the case, the need for prenatal instruction, that is for advising and guiding expectant mothers in all matters bearing upon their own health and that of their offspring, is apparent, and there is no doubt at all that this work must eventually be taken up by municipalities, if it is hoped to effect any further considerable reduction in the infant mortality rate.

Prenatal Work Begun by the New York Milk Committee.

The New York Milk Committee early recognized the importance and possibilities of this problem, and in 1911 took up prenatal guidance as part of its infant mortality work. The work was continued through 1912 and 1913, a special corps of trained nurses and physicians devoting their attention to it. Naturally, the Department of Health afforded every assistance to this Committee through its Infants' Milk Stations, the nurses of which enrolled all expectant mothers with whom they came in contact at the stations or in the homes. In this way, and by receiving tentative reports from the Committee, the Department of Health was able to keep informed concerning the progress of the new work. It was realized that despite the pronounced reduction in the City's infant mortality rate during the past ten years (152 in 1903 to 101.9 in 1913), this reduction had been largely among babies over one month of age, whereas the death rate of children under one month had varied but slightly.

This is well shown by the following analysis of infant mortality in the City of New York, 1906–1913 (the figures are rates per 1000 births):

	Death Rate Children over 1 month under 1 year	Death Rate Children under 1 month
Average 1906–1910.....	95.0	40.8
Year 1911.....	72.4	39.2
Year 1912.....	67.1	38.2
Year 1913.....	64.2	37.7

Analyzing the cause of death and comparing the five year period of 1908–1912 inclusive, with the year 1913, we find the infant death rate, in New York City, based upon 1,000 births, as follows:

Diseases	1908–1912 (Average)	1913	Decrease Per Cent.
All causes.....	120.0	101.9	15.0
Congenital.....	41.3	40.7	1.5
Respiratory.....	25.8	23.5	8.9
Diarrhoeal.....	33.4	22.5	32.6

This demonstrates how all methods heretofore adopted for the control of infant mortality have uninfluenced the deaths from congenital diseases; it indicates that any future infant mortality reduction must come about mainly through the control of this group of diseases.

Prenatal Work by the Department of Health.

Information having reached the Department of Health that the New York Milk Committee would discontinue prenatal work at the close of 1913, a center for the instruction and training

of special nurses in prenatal work, with a qualified nurse in charge, was established in April, 1913, in one of the Manhattan Milk Stations—2287 First avenue—in the hope that the Department's request for a special appropriation for this work in the budget of 1914 would be granted. Six nurses were trained in the district bordering upon this milk station.

On December 31st, 1913, because of lack of funds, the New York Milk Committee referred the 284 expectant mothers then under supervision to the Department of Health. These, added to the 347 active cases already under the Department's supervision, meant 631 cases enrolled at the beginning of 1914. The hope that the budget for 1914 would include a special appropriation for prenatal work having failed of realization, and the Department of Health feeling in duty bound to look after these six hundred mothers, eight nurses were selected from the regular milk station budgetary allowance to perform this work. These nurses, seven in Manhattan and one in Brooklyn have been detailed to special districts, and have continued the work during the first and second quarters of 1914, with the following results:

	Number	Rate per 1,000
Mothers delivered	453	.0
Number of children born, including twins	454	.0
Number of living babies born	437	961.4
Number of stillbirths	8	17.6
Number of miscarriages	9	19.8
Number of premature living births	6	13.2
Number of deaths of mothers at or during delivery	0	.0
Deaths of babies during first month	7	16.03
Babies breast-fed entirely, end of first month	391	895.39
Babies mixed-fed, end of first month	37	84.73
Babies artifically fed entirely, end of first month	9	20.61
Mothers kept under observation from first to third month of pregnancy	257	569.4
Number delivered by midwives	299	657.8
Number delivered by physicians at home and in hospitals	150	330.0
Number delivered in hospitals	37	81.4
No attendant	4	8.8
Number of cases ophthalmia neonatorum	0	.0
Number of cases of eclampsia	0	.0

Of the babies born alive, 430 or 98 per cent. were alive at the end of one month, and seven died, a mortality of 1.6 per cent. during the first month, and a rate of 16.03 against the rate of 37.7 for 1913. Three of the six premature births died during the first month. Eight stillbirths out of 454 children equals a mortality rate of 17.6 per 1,000, a low figure when it is remembered that it is estimated that one in every 20 births is a stillbirth. Seven deaths (1.6 per cent.) during the first month of life must be considered an exceptionally good showing, as it has been estimated that one in every 25 babies born alive (4 per cent.), dies before it is a month old.

It must be remembered that owing to the lack of a definite appropriation, and because of the urgency of the regular milk station work, the organization of the prenatal nurses has been largely experimental, and that, therefore, no definite conclusions can be drawn from these data, particularly in so short a time.

Results.

This brief analysis, however, shows what could be expected from a thorough and persistent prenatal campaign. Of particular interest are the low percentage of stillbirths, the low mortality during the first month of life, the small number of premature births, the protection of the mothers against fatalities, the early period of pregnancy at which instruction is begun, the large percentage of deliveries by midwives, the small percentage of the poor taking advantage of hospital facilities, the ability of procuring increased birth registration, and the encouragement and attainment of a high percentage of maternal nursing.

The figures of the New York Milk Committee taken from the Seventh Annual Report of the New York Milk Committee for 1913, furnish valuable and interesting information.

		Rate per 1,000
Mothers supervised	2,644	....
Living babies born, including twins	2,579	960.1
Living prematures	43	16.6
Stillbirths	107	39.8
Deaths of mothers	4	1.5
Deaths of babies under one month	72	27.9
Babies breast-fed end of one month	2,338	933.0
Babies artificially fed end of one month	73	29.0
Babies mixed-fed end of one month	94	38.0

"The stillbirth rate of the Borough of Manhattan for the same period was 47.5. The Committee rate among supervised cases was 39.8, showing a saving of 7.7 per 1,000. But the saving was undoubtedly greater than this for it is generally agreed that a large proportion of stillbirths are not reported."

"The death rate of babies under one month for the Borough of Manhattan during the period August 1st, 1911, to November

30th, 1913, was 40 per one thousand. The rate among cases receiving prenatal care was 27.9, showing that had the Committee rates prevailed there would have been a saving of 1,850 infant lives during the above period."

The fact that 93.3 per cent. of the babies were breast-fed and 3.8 mixed-fed, at the end of one month—the time of discharge—shows in a measure that the constant urging of maternal nursing bore fruit.

Attention is called to the fact that at the end of the first month after confinement, if the mother and baby are in good health, they are referred to and followed up by the nearest infants' milk station, thus bringing them under a continuation course of instruction, and under influences which make for better and healthier mothers and babies.

The Department of Health, therefore, believes that the best time to take care of a baby's health is before it is born, and that a child's greatest asset is a healthy mother and a healthy father; that instruction to expectant mothers should be widely extended, and that any material reduction in the infant mortality rate must come through this means; that in order to carry on this work properly, nurses with special aptitude and qualifications should be selected, and that while even in the imperfect organization of this work, rendered necessary during the past year because of no special budgetary provision, some good has been effected, nevertheless the time has been too short to allow the collection of any definite facts and figures beyond those above noted, or drawing any more definite conclusions as to the results obtained. One thing is certain—the control of deaths from congenital diseases can come about only through education.

What Can Be Expected from Prenatal Work.

The Department of Health looks forward to the following accomplishments with the organization of prenatal work:

(1) A reduction of the general infant mortality and morbidity, more particularly from the congenital diseases and during the first month of life.

(2) A decrease in the number of still and premature births, thus increasing the number of births, and indirectly the general health of the mothers and the resistance of the infants.

(3) The encouragement and increase of maternal nursing and the promotion of intelligent motherhood.

(4) The production of healthier and stronger children.

(5) Prevention and reduction of disease and injuries to the mother, improvement of her general well being, betterment of home conditions under which the family lives.

(6) Indirectly an improvement in the practice of midwifery, because of increased supervision by personal contact of nurses with midwives.

(7) Diminution in the number of cases of ophthalmia neonatorum by instructing mothers to insist that "silver drops" are instilled into the eyes directly after birth.

(8) The bringing of mothers and babies under the educational and prophylactic influences of milk stations immediately after the first month of the infant's life.

(9) The establishment of a confidence in the mothers which will cause them to seek this instruction in future pregnancies.

We do not maintain that prenatal instruction will affect deaths from all conditions classified under the heading, congenital diseases, and all forces acting during intrauterine life; it is contended, however, that the greater part of deaths due to these causes are very largely preventable.

It is the earnest desire of the Department of Health to continue this work with a properly organized, qualified and interested corps of nurses, and it is its sincere hope that the budget for the coming year will make provision for the supervision of pregnancy during the prenatal, natal and postnatal periods.

THE SUPERVISION OF MIDWIVES IN THE CITY OF NEW YORK.

By

ROSALIE BELL, M. D.,

Bureau of Public Health Education.

Prior to 1907, any woman residing in the City of New York who desired to practice midwifery, was allowed to do so, if she would present in person, at the office of the Department of Health, a certificate of good moral character, and of proper experience in midwifery signed by two physicians, and register her name at the office of the Registrar of Records. She was not subjected to any supervision whatever, nor were her qualifications investigated or questioned, except upon the receipt of some complaint against her.

For many years this method was apparently successful, as the class of foreign midwives coming to this country had been well trained in regular schools of midwifery, and accustomed to rigorous supervision, but, as the character of immigration changed, the class of midwives also changed and before long we had in our midst many midwives who had not completed a course of midwifery and others who had been denied diplomas. In addition, in our own city, we had at that time no accepted standard for midwives, or any official training school. As the foreign population rapidly increased, thus creating a demand for the services of midwives (for it is entirely by that population that the midwife is employed) many women totally lacking in the necessary qualifications were able, through the very limited requirements, to enter the profession. In the course of a few years we had, in consequence, a number of untrained midwives, totally unfit to assume such responsibilities as that profession demanded. Complaints against the midwives became more and more numerous, and finally the Department decided to take active steps to control and supervise the practice of midwives.

At that time, strange as it seems to us now, the Department of Health had not been empowered by the State Legislature with any authority in regard to the control of midwives. Efforts were shortly made by the Department toward the enactment of such a law, and an Act regulating and restraining the practice of midwifery in the City of New York became a law June 6, 1907, with the approval of the Governor.

This law of 1907, Chapter 432, reads as follows:

> Section 1. The Department of Health of the City of New York is hereby vested with power and authority to adopt rules and regulations and adopt ordinances governing the practice of midwifery in the City of New York, including rules and regulations and ordinances for admission to said practice, the exclusion

from said practice, and the regulation and inspection of midwives and the practice of midwifery generally, in the City of New York.

Section 2. As used in this act the practice of midwifery means the offering or undertaking by any person to assist for a compensation of any kind a woman in normal child-birth, but it does not include at any child-birth the use of any instrument, nor the assisting of child-birth by an artificial, forcible or mechanical means, nor the performance of any version, nor the removal of adherent placenta, nor the administering, prescribing, advising or employing in child-birth of any drug other than a disinfectant. This act shall not be construed as applying to any practitioner of medicine duly authorized to practice medicine and registered according to law, nor shall it authorize any midwife to practice medicine.

Section 3. Any person who shall practice midwifery in the City of New York in violation of any rules, regulations and ordinances promulgated by the Department of Health shall be guilty of a misdemeanor.

Section 4. This act shall take effect immediately.

On November 6, 1907, the Board of Health adopted the following section of the Sanitary Code:

Section 184. No person other than a licensed physician shall practice midwifery in the City of New York without a permit of the Board of Health authorizing such practice, and no person unless authorized by law to do so shall conduct a lying-in-hospital, home, or place for the care of pregnant and parturient women, or advertise, offer, or undertake to receive and care for them at such place, or at his or her home, without a permit from the Board of Health.

The Department of Health now empowered with proper authority, and, after a thorough investigation of local conditions and a careful study of the methods employed by various European countries, adopted in the latter part of 1907 certain rules and regulations. In 1909 the supervision of midwives was placed under the direction of the Bureau of Child Hygiene, and steps were taken to secure adequate control of the situation.

All midwives known to be engaged in the practice of midwifery in the City of New York were visited by Medical Inspectors who explained to them the recent enactment of the law governing the practice of midwifery and requested them to call in person at the Department of Health office and make an application for a permit to practice midwifery. The following questions appear on the application blank: name, age and address of the midwife; social condition, single, married or widowed (if married the maiden name also); names under which midwife has practised midwifery; the amount of general education received;

training in midwifery whether in school of midwifery or from private physician, giving his name, address and number of cases conducted under his supervision—whether or not midwife has ever been arrested on a criminal charge, and if so, the full particulars and results. Then signature of midwife and date of application. In addition the application must be endorsed by two physicians who state the length of time they have known the midwife, and the number of cases she has conducted under their supervision. It is also endorsed by some layman, preferably a clergyman, who vouches for the moral character of the midwife, and states the length of time he has known her. These applications when properly filled out are returned to the Bureau of Child Hygiene where they are registered, then forwarded to a Medical Inspector for investigation.

The Medical Inspector calls upon the midwife, noting on the application blank the name and wording of her sign, the character of the house, private house or tenement, the number of rooms and condition of same, whether clean and orderly or otherwise, the personal appearance of the midwife, whether neat and clean or otherwise. Inquiries are made in regard to the training of the midwife. If obtained at a school of midwifery, the diploma is inspected and the name and address of the midwife noted; name and location of college or school issuing the diploma; date of issuance. If trained by private physicians, the names and addresses of such physicians and the number of cases which the midwife conducted under their supervision.

The equipment of the midwife is next inspected. This should contain certain articles prescribed by the Department and should be kept in a cleanly condition. Certain articles are prohibited, such as:

Uterine syringes,
Uterine dressing forceps,
Obstetrical forceps,
Specula,
Sounds or applicators,
Metal catheters,
Examining chairs or tables,
Drugs, other than specified in rules and regulations.

The stubs of birth records are also examined and their neatness and accuracy noted. When all conditions are satisfactory and the equipment is complete in every way, the application is signed and dated by the Medical Inspector and returned to the Department office where it is filed for future reference. The Board of Health then grants to the midwife a permit to practice midwifery, which expires one year from date of issuance. The midwife is duly notified and again calls in person at the office of the Bureau of Child Hygiene, receives her permit, a book of Rules and Regulations governing the practice of midwifery in the City of New York, and in addition a supply of silver nitrate solution which must be used according to the rules and regulations.

Each month the midwife is visited by the Department nurse who inspects her home and equipment. If any complaints are made against the midwife, regarding her work, or she is accused of criminal practice, etc., an investigation is made by the Medical Inspector and the matter properly adjusted.

At the end of the year when the permit is about to expire, the midwife again sends in an application and is visited by the Inspector and the same investigation made as formerly.

It can easily be seen what an enormous responsibility the Department of Health has assumed, and few people know of the many difficulties with which the Department is obliged to cope.

In earlier days many of the midwives visited were graduates of well known midwifery schools abroad, and were therefore loathe to submit to the Departmental inspection of their homes, and obstetrical outfits. They could not at first realize that the granting of permits by the Department and the supervision of their practice was a great advantage to them, for by it the standard was raised and many untrained and unscrupulous persons were prohibited and excluded from practicing midwifery. Moreover, by the supervision of the Department of Health, the midwives were protected from unjust accusations, as all complaints against midwives, such as incompetence, criminal ignorance or negligence, criminal abortions, etc., are carefully investigated by the Bureau of Child Hygiene. In many instances such investigations have resulted in the complete exoneration of the midwife.

It was found among the Latin races and some others, that many diplomas granted were issued in the maiden name of the midwife, while upon her sign was given the married name. In this way many graduated midwives have been twice enumerated by investigators other than those connected with the Department of Health, and an incorrect estimate made of the number of midwives practicing in New York City as well as those licensed by the Department of Health.

In 1913 there were in the City of New York 1,344 licensed midwives:

Nationality	Total	Per Cent.
Austrian	278	20.6
Italian	355	26.4
German	311	23.1
Russian	206	15.3
United States	123	9.1
Norway-Sweden	18	1.3
England-Wales	18	1.3
Swiss	9	.7
French	13	1.0
Finnish	4	.3
Greek	2	.1
Turkish	3	.2
Holland	2	.1
Miscellaneous	2	.1

While the number of midwives has considerably increased in the past six years, the ratio of various nationalities has not materially altered. Among the European schools represented are the midwifery schools of Naples, Palermo, Catania, Berlin, Munich, Vienna, Lemberg, Czernowitz, Kief, Prague, Budapest, Bucharest, Christiania and Copenhagen.

There have been for some years several private training schools for midwives in the City of New York, but it was not until 1911 that a free training school was established. This school, under municipal control, was organized by the trustees of Bellevue and Allied Hospital for the purpose of giving women who desired to practice midwifery an opportunity to secure a practical training to fit them for this work. The length of the course is six months, a portion of which time is devoted to outside work, attending patients in their homes under the directions of a physician and nurse.

Outline of Course.

(1) Instructions in the principles of hygiene as regards the home, food-supply, person, etc.

(2) In the elementary anatomy of the female generative organs and pelvis, including pelvimetry.

(3) Pregnancy and principal complications, including abortion.

(4) Symptoms, mechanisms, course and management of normal labors.

(5) Presentations; palpation, ausculation and vaginal examination.

(6) Antiseptics; their preparation and use.

(7) The management of the puerperium, normal and abnormal.

(8) Hemorrhage; varieties and treatment until arrival of doctor.

(9) Puerperal fevers; nature, causes and symptoms.

(10) Preparation of dressings and room for labor, including baths, douches, irrigations, catheterization, care of instruments, etc.

(11) Drugs as used by midwife.

(12) Care of infant, with special emphasis on eyes and cord.

(13) Infant feeding and home modification of milk.

(14) Care of infant apparently lifeless.

(15) Ethics, rules and regulations of Board of Health, legal status, etc.

Diplomas.

A diploma is given to the pupils who complete satisfactorily the prescribed course, and have successfully passed the examinations given at the close.

At the present writing, while conditions are by no means ideal, there is a vast improvement. A standard for midwives has been fixed and a municipal training school has been established and now it is no longer possible as in former days, for a midwife to obtain from the Department a permit to practice midwifery when she has no training in midwifery other than that afforded by attending a number of obstetrical cases under the supervision of a private physician. The midwife must be a graduate of a school of midwifery recognized by the Department as maintaining a certain standard.

On January 1, 1914, the following rules and regulations pertaining to schools of midwifery were adopted by the Board of Health.

RULES AND REGULATIONS OF BOARD OF HEALTH RELATING TO SCHOOLS FOR MIDWIVES.

I. General Conduct of Schools.

The school must be conducted under the supervision of a hospital recognized by the Department of Health.

The school must have facilities to accommodate at least ten pregnant women during the lying-in period, and facilities for their confinement on the premises.

The school must have a resident physician and one or more registered nurses.

The permit must be displayed in a conspicuous place.

Violation of any of the rules and regulations of the Board of Health may lead to the revocation of the permit.

II. Requirements for Entrance to the Schools.

In order to take a course of instruction requirements for entrance into the school must include the following:

(1) Applicant must be at least 21 years of age, be free from any disease that might be communicated during the practice of midwifery, and must present a certificate of recent vaccination.

(2) Applicant must give for reference the names and addresses of two persons, not relatives, who have known the applicant for a number of years.

(3) Applicant must fill out the application blank (in her own handwriting) including at least name, present address, age, whether single, married or widow, education, height, weight, general physical condition, including sight and hearing.

III. Instruction and Course of Study of Schools.

The Instruction and Course of Study at the school must include the following:

(a) A probation period (of at least two weeks) to determine the fitness of the applicant.

(b) A course of study of at least six months duration.

(c) Pupils to reside at the school during the entire course.

(d) Pupils to be on duty at least ten hours daily, or 70 hours weekly.

(e) Time lost by absence to be made up.

(f) Each pupil to have attended at least twenty cases of labor, and have had the care of at least twenty mothers and new-born infants during the lying-in period (ten days).

(g) The instruction given to pupils must equip them with a thorough theoretical and practical knowledge of obstetrics, and must at least include:

(1) The principles of hygiene: (a) the home (b) food supply and (c) person.

(2) The elementary anatomy of the female generative organs and pelvis.

(3) Pelvimetry.

(4) Pregnancy: (a) symptoms (b) complications.

(5) Normal labor: (a) symptoms (b) mechanics (c) course (d) management (e) presentation (f) palpation (g) ausculation (h) vaginal examination (i) asepsis (j) antiseptics; their preparation and use.

(6) Puerperium: (a) normal (b) abnormal.

(7) Hemorrhage: (a) varieties (b) treatment.

(8) Puerperal fevers: (a) causes (b) symptoms.

(9) (a) Preparation of dressings and room for labor (b) methods of giving baths, douches and irrigations (c) performances of catherization (d) care of instruments.

(10) Care of infants: (a) asphyxia (b) eyes (c) cord (d) hygiene of infancy (e) infant feeding (f) home modification of milk.

IV. Recognition of Schools Outside of New York City.

A school conducted in the United States outside of New York City will be recognized by the Department of Health if it is under State or Municipal control, and all of the requirements hereinbefore mentioned are fulfilled.

A school conducted in a foreign country will be recognized by the Department of Health if it is under the control of the Government, maintains a resident course of at least six months, and gives a course of instruction equal or superior to that described above.

VITAL STATISTICS.

Summary for the Month of June, 1914.

The mortality from all causes for the month of June, 1914, was lower by .89 of a point per 1,000 of the population than that for the month of June, 1913, the rates being 11.93 and 12.82 and the absolute figures being 5,469 and 5,655 respectively. If the death rate of June, 1913, had prevailed during the past month the number of deaths would have been 5,878 or 409 more than actually occurred.

Correcting the absolute figures of the individual causes of death by providing for the increase in population, the following causes showed a decreased mortality, as stated: measles 14, scarlet fever 17, whooping cough 24, diphtheria and croup 15, influenza 2, tuberculous diseases other than pulmonary 5, cancer 5, organic heart diseases 154, acute respiratory diseases 89, diseases of the stomach 13, diarrhoeal diseases under five years of age 57, appendicitis 7, cirrhosis of the liver 15, old age 14, violence 12, suicides 10, and all other causes 63. The following causes showed an increased mortality: typhoid fever 5, tuberculosis of the lungs 24, cerebro-spinal-meningitis 14, Bright's disease and nephritis 61, puerperal diseases 3.

Viewed from the point of age grouping of the decedents, infants under one year of age showed a decrease of 117 deaths, between one and five years of age 148 deaths, between five and fifteen years of age 28 deaths, between twenty-five and forty-five years of age 5 deaths, and sixty-five years and over 172 deaths. The age groups that showed an increased mortality were those between fifteen and twenty-five years of age, the increase being 24 deaths and those between forty-five and sixty-five years of age, the increase being 37 deaths.

Of the large number of non-residents who came to the city for medical and surgical treatment 71 died. The increase in the death rate from this factor being .61 of a point.

The number of births reported during the month was 11,945, an increase of 1,227 over the figures of June, 1913. The number of marriages reported was 5,469, an increase of 82.

VITAL STATISTICS.

Summary for the Third Quarter Ending September 30th, 1914.

There were 16,991 deaths reported during the third quarter, giving a rate of 12.08, as compared with 16,818 deaths reported, with a rate of 12.43 per 1,000 of the population, in September, 1913; an absolute increase of 173 deaths, with a decrease in the rate of .35 of a point, which is equivalent to a relative decrease of 162 deaths.

If comparison be made between the mortality figures for the quarter just ended and the quinquennial average of the corresponding quarters of the previous five years, corrected to correspond with the increase in population, it will be found that with two exceptions—cancer and organic heart disease—there has been a decreased mortality from all causes as shown in the accompanying Comparative Quarterly Summary.

The greatest decrease in mortality was exhibited in the diarrhoeal diseases under five years of age, almost one thousand fewer children dying within this age group. Typhoid fever showed a decreased mortality of 79 deaths, measles 75, scarlet fever 28, whooping cough 60, diphtheria and croup 7, tuberculosis of the lungs 204.

Viewed from the point of age grouping there were somewhat over two thousand fewer deaths of children under five years of age, this included a decrease of 1,425 deaths among infants under one year of age; the group from five to sixty-five years showed a decreased mortality of a little over 600; in that from sixty-five to seventy years a decrease of 45 deaths was noted, and in the group seventy years and over an increased mortality of 23 deaths was shown.

The number of births reported during the past quarter was 35,778, an increase of 1,222 over the number reported in the corresponding quarter of 1913. The number of marriages reported was 12,648 as against 12,741 in 1913, a decrease of 93.

CONDENSED QUARTERLY REPORT

	2d Quarter	
	1914	1913
Estimated population	5,583,871	5,372,983
Deaths	19,184	18,944
Death rates	13.79	14.15
Births	35,383	32,717
Marriages	13,956	13,201
Still-births	1,643	1,669

MORTALITY BY PRINCIPAL CAUSES

Abridged Nomenclature, with Age, Sex, Color and Place of Death of Decedents for the Quarter ending June 30, 1914

	New York City						
	1914				Corrected Average Preceding *5 years	Increase over Quinquennial Average	Decrease from Quinquennial Average
	April	May	June	Total			
Total, all causes	6,860	6,855	5,469	19,184	21,261	.....	2,077
1. Typhoid Fever	16	29	19	64	78	.....	14
2. Typhus Fever	.....	.....	.....	.....	.....	.....	.....
3. Malarial Fever	1	4	1	6	6	.....	.....
4. Small-pox	.....	.....	.....	.....	1	.....	1
5. Measles	89	106	75	270	382	.....	112
6. Scarlet Fever	80	70	42	192	320	.....	128
7. Whooping Cough	36	31	20	87	112	.....	25
8. Diphtheria and Croup	161	164	123	448	494	.....	46
9. Influenza	54	21	6	81	97	.....	16
12. Other Epidemic Diseases	69	38	32	139	145	.....	6
13. Tuberculosis Pulmonalis	822	805	712	2,339	2,567	.....	228
14. Tuberculosis Meningitis	73	89	72	234	276	.....	42
15. Other Forms of Tuberculosis	65	56	48	171	173	.....	2
16. Cancer, Malignant Tumors	393	384	342	1,119	1,058	61	.....
17. Simple Meningitis, of which	30	39	45	114	161	.....	47
17a. Cerebro Spinal Meningitis	14	24	32	70	76	.....	6
18. Apoplexy and Softening of Brain	108	97	68	273	261	12	.....
19. Organic Heart Disease	892	898	628	2,418	2,217	201	.....
20. Acute Bronchitis	55	48	41	144	240	.....	96
21. Chronic Bronchitis	14	6	10	30	82	.....	52
22. Pneumonia, excluding Broncho Pneumonia	557	480	297	1,334	1,561	.....	227

*Corrected to correspond to increase of population.

	New York City						
	1914				Corrected Average Preceding *5 years	Increase over Quinquennial Average	Decrease from Quinquennial Average
	April	May	June	Total			
22a. Broncho Pneumonia	492	471	341	1,304	1,564	.....	260
23. Other Respiratory Diseases	44	57	40	141	208	.....	67
24. Diseases of Stomach (Cancer excepted)	29	45	34	108	135	.....	27
25. Diarrhoeal Diseases (under 5 years)	149	187	155	491	803	.....	312
26. Appendicitis and Typhylitis	63	66	60	189	183	6	.....
27. Hernia and Intestinal Obstruction	64	50	41	155	160	.....	5
28. Cirrhosis of Liver	68	73	52	193	292	.....	99
29. Bright's Disease and Acute Nephritis	466	513	480	1,459	1,591	.....	132
30. Diseases of Women (not Cancerous)	33	41	33	107	105	2	.....
31. Puerperal Septicaemia	31	28	21	80	74	6	.....
32. Other Puerperal Diseases	48	38	36	122	136	.....	14
33. Congenital Debility and Malformations	403	422	331	1,156	1,135	21	.....
34. Old Age	43	41	19	103	160	.....	57
35. Violent Deaths (Suicide excepted)	364	385	359	1,108	1,089	19	.....
a. Sunstroke	.....	.....	.....	.....	27	.....	27
b. Other Accidents	339	363	343	1,045	990	55	.....
c. Homicides	25	22	16	63	72	.....	9
36. Suicides	71	75	52	198	245	.....	47
37. Other causes	968	993	831	2,792	3,065	.....	273
38. Ill-defined causes	7	5	3	15	85	.....	70
Under 1 year	1,115	1,151	881	3,147	3,898	.....	751
1 yr. and under 2 yrs.	393	411	304	1,108	1,361	.....	253
Total under 5 years	1,807	1,876	1,426	5,109	6,426	.....	1,317
65 years and over	1,234	1,227	865	3,326	3,445	.....	119
70 years and over	853	869	577	2,299	2,328	.....	29
Males	3,819	3,710	3,101	10,630	11,681	.....	1,051
Females	3,041	3,145	2,368	8,554	9,580	.....	1,026
Colored	265	237	194	696	696	.....	.....
Chinese	9	9	4	22	26	.....	4
Institutions	2,908	2,864	2,424	8,196	8,199	.....	3
Tenements	2,732	2,698	2,023	7,463	9,026	.....	1,563
Dwellings	1,005	1,046	801	2,852	3,346	.....	494
Hotels, Others, etc.	215	247	211	673	690	.....	17
Death rate	14.96	14.47	11.93	13.79	17.09	.....	3.30

*Corrected to correspond to increase of population.

POPULATION, MARRIAGES, BIRTHS AND DEATHS, JUNE, 1914.

Boroughs	Estimated Population† Bureau of the Census	Estimated Population July 1, 1914	Certificates Received and Tabulated			Rate per 1,000 Based on Department Estimate			Corrected Death Rate *
			Marriages	B'ths	D'ths**	Marriages	B'ths	D'ths	
Manhattan..	2,481,997	2,538,606	3,558	5,734	2,716	17.07	27.50	13.03	12.76
The Bronx..	535,877	641,980	490	1,319	547	9.29	25.01	10.37	10.03
Brooklyn....	1,818,128	1,916,655	1,742	3,924	1,746	11.07	24.93	11.00	11.44
Queens.....	340,773	387,444	296	781	317	9.30	24.55	9.96	11.15
Richmond...	94,544	99,186	82	187	143	10.07	22.95	17.55	15.22
City of N. Y.	5,271,319	5,583,871	6,168	11,945	5,469	13.45	26.05	11.93	.....

Boroughs		Death Rate June, 1913 for Comparison.
	Manhattan.....13.58	
	The Bronx.....11.26	
	Brooklyn.....12.41	
	Queens.....11.37	
	Richmond.....15.62	
	City of N. Y.....12.82	

* The death-rate of each Borough is corrected by inclusion of the deaths of its residents in other Boroughs, and exclusion of deaths of residents of other Boroughs within its boundaries.

† The estimate of the Bureau of the Census is based upon the arithmetical method, that of the Department of Health upon the geometrical method of determining the increase in population for post-censal years.

** Includes 71 deaths of non-residents of the City, which, if deducted, would give a death rate for the City of 11.77 per 1,000.

DEATHS ACCORDING TO AGE GROUPS, JUNE, 1914.

Boroughs	All Ages	Under 1 Year	1 Year and under 2	Under 5 Years	5–15 Years	15–25 Years	25–45 Years	45–65 Years	65 Years and over	Colored	Chinese
Manhattan.	2,660	480	169	752	122	159	582	684	361	124	1
The Bronx.	529	74	16	113	24	42	131	138	81	10	..
Brooklyn...	1,801	253	90	438	81	121	382	455	324	53	3
Queens.....	355	59	23	101	15	22	62	82	73	7	..
Richmond..	124	15	6	22	4	12	22	38	26	...	..
Cityof N.Y.	5,469	881	304	1,426	246	356	1,179	1,397	865	194	4

REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

JUNE, 1914.

	Manhattan		The Bronx		Brooklyn		Queens		Richmond		City of New York	
	June 1914	June 1913	June 1914	June 1913	June 1914	June 1913	June 1914	June 1913	June 1914	June 1913	June 1914	June 1913
Total, all causes	2,660	2,730	529	516	1,801	1,909	355	383	124	117	5,469	5,655
1. Typhoid Fever	11	5	3	2	4	5	1	1	..	..	19	13
3. Malarial Fever	1	..	..	..	..	1	..	..	..	..	1	1
4. Smallpox	..	..	..	..	..	..	..	..	..	..	..	..
5. Measles	47	41	5	8	19	30	3	6	1	1	75	86
6. Scarlet Fever	25	22	1	5	10	23	6	5	..	2	42	57
7. Whooping Cough	10	18	2	2	7	14	1	6	..	2	20	42
8. Diphtheria and Croup	63	76	12	16	38	29	10	11	..	1	123	133
9. Influenza	1	1	1	2	3	4	1	1	..	..	6	8
10. Asiatic Cholera	..	..	..	..	..	..	..	..	..	..	..	..
11. Cholera Nostras	..	..	..	..	..	..	..	..	..	..	..	..
12. Other Epidemic Diseases	23	14	3	1	4	9	1	..	1	1	32	25
13. Tuberculosis Pulmonalis	373	336	80	74	211	193	35	49	13	10	712	662
14. Tuberculous Meningitis	36	34	6	4	23	23	6	3	1	2	72	66
15. Other forms of Tuberculosis	32	35	2	3	12	11	2	4	..	1	48	54
16. Cancer, Malignant Tumor	168	154	32	37	117	113	19	20	6	10	342	334
17. Simple Meningitis	28	17	1	3	10	10	5	2	1	1	45	33
Of which												
17a. Cerebro-Spinal Meningitis	21	11	1	2	8	4	2	..	..	..	32	17
18. Apoplexy, and Softening of the Brain	29	36	7	6	19	20	11	14	2	1	68	67
19. Organic Heart Diseases	221	305	73	88	280	294	44	52	10	13	628	752
20. Acute Bronchitis	21	24	..	2	17	20	3	1	..	1	40	48
21. Chronic Bronchitis	4	..	2	..	3	4	1	..	..	2	10	6
22. Pneumonia (exc. Broncho Pneumonia)	152	154	36	18	94	123	12	23	3	6	297	324
22a. Broncho Pneumonia	186	208	23	23	110	116	20	14	2	5	341	366
23. Other Respiratory Diseases	17	23	2	4	17	17	4	1	..	..	40	45
24. Diseases of the Stomach (Cancer excepted)	15	18	4	4	11	19	4	4	..	..	34	45
25. Diarrhoeal Diseases (under 5 years)	71	79	8	16	53	86	21	19	2	4	155	204
26. Appendicitis and Typhilitis	21	30	8	4	23	24	5	6	3	..	60	64
Hernia, Intestinal Obstruction	21	19	4	5	14	15	1	7	1	3	41	49
28. Cirrhosis of Liver	22	29	7	1	19	29	3	3	1	2	52	64
29. Bright's Disease and Nephritis	238	189	33	28	152	150	27	27	30	9	480	403
30. Diseases of Women (not Cancer)	13	8	8	1	11	10	1	3	..	..	33	22
31. Puerperal Septicaemia	8	2	5	2	6	9	2	1	..	..	21	14
32. Other Puerperal Diseases	16	17	5	5	11	13	4	2	..	..	36	37
33. Congenital Debility and Malformations	174	175	32	30	83	88	32	23	10	5	331	321
34. Old Age	9	19	2	4	4	6	2	2	2	1	19	32
35. Violent Deaths	184	197	24	31	114	98	19	21	18	10	359	357
a. Sunstroke	..	2	..	..	..	1	..	1	..	..	..	4
b. Other Accidents	174	180	24	30	109	92	19	19	17	10	343	331
c. Homicide	10	15	..	1	5	5	..	1	1	..	16	22
36. Suicide	24	42	14	9	9	6	5	3	..	..	52	60
37. All other causes	394	403	83	78	293	298	44	59	17	24	831	860
38. Ill-defined causes	2	..	1	..	..	..	..	..	..	..	3	1

REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, JUNE, 1914.

BOROUGH OF MANHATTAN.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	154.0	9,750	63.0	..	..	..	..	....	3	1	....	2	19	6
2	81.0	933	11.5	..	..	..	..	....	....	....	....	....	4	....
3	95.0	1,915	20.2	..	..	..	..	....	....	....	....	....	3	1
4	83.0	21,336	257.1	..	..	1	1	....	6	7	....	1	30	13
5	168.0	5,666	33.7	..	..	1	..	....	1	2	1	....	13	1
6	86.0	19,670	228.7	..	..	..	1	1	9	1	1	3	25	9
7	198.0	102,101	515.6	..	..	4	4	4	12	12	6	7	110	45
8	183.0	33,182	181.4	..	..	3	1	....	5	5	2	....	42	17
9	322.0	64,909	201.6	..	..	1	..	2	18	8	2	6	107	25
10	110.0	66,439	604.0	..	..	..	..	....	7	1	2	2	44	8
11	196.0	136,548	696.7	2	..	4	2	2	7	8	5	1	82	31
12 e	1,019.0	205,130	201.3	2	..	1	2	7	33	17	14	8	235	87
12 c	1,738.0	332,692	191.4	..	..	4	3	14	56	12	14	6	327	76
12 w	1,106.0	103,532	93.6	..	..	3	1	2	15	5	11	1	187	30
12 n	2,291.0	165,294	72.1	1	..	..	..	2	19	4	6	....	121	11
13	107.0	64,651	604.3	..	..	1	2	1	5	8	4	....	54	19
14	96.0	38,321	399.3	..	..	3	1	3	6	5	8	3	59	30
15	198.0	30,584	154.5	..	..	..	..	....	5	3	2	....	29	5
16	349.0	55,926	160.2	..	..	1	1	....	10	5	6	....	68	16
17	331.0	172,334	520.6	..	..	4	1	6	14	18	13	6	155	57
18	450.0	62,821	139.6	..	..	3	..	4	17	7	5	7	121	40
19	1,481.0	292,950	197.7	3	..	4	4	9	53	27	18	10	386	112
20	444.0	73,308	165.1	1	..	4	..	1	14	5	10	1	96	22
21	411.0	62,345	151.7	..	..	3	..	1	18	15	9	8	110	40
22	1,529.0	209,154	136.8	2	..	2	1	4	40	10	13	4	223	51
Total..	13,226.0	2,331,491	176.3	11	..	47	25	63	373	186	152	76	2,660	752

BOROUGH OF THE BRONX.

23	4,267.0	268,880	63.0	3	..	5	8	8	54	21	11	3	311	68
24	22,255.8	162,062	7.3	..	..	..	6	4	26	15	12	5	218	45
Total..	26,522.8	430,942	16.2	3	..	5	14	12	80	36	23	8	529	113

BOROUGH OF BROOKLYN.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	233.0	21,851	93.8	..	..	1	..	3	1	2	2	1	45	6
2	97.7	6,894	70.6	..	..	..	..	....	2	1	1	....	8	2
3	161.4	15,910	98.6	..	..	1	..	2	7	....	....	2	27	7
4	111.3	10,477	94.1	..	..	1	..	....	7	3	....	....	26	4
5	119.4	19,401	162.5	..	..	1	..	1	2	3	2	3	31	17
6	302.9	46,437	153.3	..	..	..	..	2	9	2	6	3	49	12
7	458.5	44,037	96.0	..	..	..	1	....	4	2	1	1	41	10
8	1,843.2	82,687	44.9	1	..	5	1	1	22	4	7	7	119	39
9	623.6	50,501	81.0	..	..	1	..	1	9	4	6	1	69	15
10	318.7	41,238	129.4	..	..	1	1	2	6	2	5	1	59	18
11	252.6	21,659	85.7	..	..	..	..	....	1	3	4	2	30	9
12	663.1	29,262	44.1	..	..	..	3	1	8	3	4	1	41	10
13	230.3	30,091	130.7	..	..	..	1	....	2	2	1	....	33	6
14	282.6	33,329	117.9	..	..	..	..	....	2	1	5	....	30	16
15	244.8	35,887	146.6	..	..	..	..	2	2	2	4	1	31	10
16	244.8	68,244	278.7	..	..	1	..	1	6	3	3	1	43	14
17	823.3	70,346	85.5	..	..	1	..	2	6	4	3	6	69	23
18	873.0	35,708	40.9	..	..	..	..	....	4	4	3	2	44	13
19	413.8	44,860	108.4	..	..	..	..	1	1	4	5	2	46	11
20	461.4	27,463	59.5	..	..	..	..	....	5	....	2	1	29	5
21	483.2	78,741	163.0	..	..	..	..	1	11	3	5	2	82	15
22	1,361.6	81,283	59.7	1	..	..	1	1	8	2	5	5	104	18
23	736.0	65,561	89.1	..	..	1	..	1	9	5	3	1	87	11
24	1,198.5	80,466	67.2	..	..	..	..	....	8	5	4	1	63	14
25	567.8	63,597	112.0	1	..	2	..	1	12	1	3	3	66	11
26	3,590.2	177,963	49.5	1	..	3	..	5	10	11	10	5	145	42
27	400.7	76,000	189.6	..	..	..	..	....	10	6	6	1	62	16
28	884.4	77,451	87.6	..	..	..	..	3	19	1	4	2	111	17
29	3,800.0	72,351	19.0	..	..	..	1	2	7	4	....	3	87	14
30	5,401.1	76,406	14.1	..	..	..	1	3	7	4	3	3	80	20
31	6,312.3	30,988	4.9	..	..	..	..	....	2	1	2	2	44	9
32	5,479.5	17,419	3.2	..	..	..	..	2	2	2	1	....	20	4
Total.	38,977.8	1,634,508	41.9	4	..	19	10	38	211	94	110	63	1,801	438

BOROUGH OF QUEENS.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	4,650.0	61,763	13.3	..	..	2	2	2	9	3	6	4	85	27
2	14,700.0	105,219	7.2	..	..	1	2	5	10	3	7	11	110	35
3	22,000.0	37,171	1.7	..	..	..	..	..	4	3	1	3	50	11
4	36,600.0	67,412	1.8	1	..	..	2	3	10	2	4	4	89	25
5	3,770.0	12,476	3.3	..	..	..	..	..	2	1	2	..	21	3
Total..	81,720.0	284,041	3.5	1	..	3	6	10	35	12	20	22	355	101

BOROUGH OF RICHMOND.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	3,340.0	27,201	8.1	..	..	..	..	..	5	3	..	..	46	7
2	4,130.0	16,871	4.1	..	..	1	..	..	2	..	1	..	21	5
3	10,050.0	19,812	2.0	..	..	..	..	..	2	..	1	1	27	4
4	8,180.0	10,662	1.3	..	..	..	..	..	3	..	..	1	21	5
5	10,900.0	11,423	1.0	..	..	..	..	..	1	..	..	..	9	1
Total..	36,600.0	85,969	2.3	..	..	1	..	..	13	3	2	2	124	22

INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, during Months ending June 30, 1913, and June 30, 1914.

	Manhattan		The Bronx		Brooklyn		Queens		Richmond		New York	
	1913	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913	1914
Typhus Fever	0	3	0	0	0	0	0	0	0	0	0	3
Typhoid Fever	40	83	10	16	32	42	4	5	0	1	86	147
Smallpox	2	3	0	0	0	0	0	0	0	0	2	3
Measles	1,822	1,807	616	575	1,651	1,383	307	254	75	75	4,471	4,094
Scarlet Fever	301	451	56	107	293	302	61	72	36	19	747	951
Whooping Cough	114	211	41	27	186	99	28	16	13	10	382	363
Diphtheria	607	848	201	257	423	498	72	123	7	11	1,310	1,737
Leprosy	0	0	0	0	1	0	0	0	0	0	1	0
Mumps	118	239	21	35	92	237	12	20	3	4	246	535
German Measles	230	66	57	11	151	43	50	4	5	5	493	129
Chickenpox	323	611	74	78	305	333	31	59	22	23	755	1,104
Glanders	0	0	0	0	0	0	0	0	0	0	0	0
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0
Rabies	0	0	0	0	0	0	0	0	0	0	0	0
Tetanus	0	1	0	0	0	1	0	0	0	0	0	2
Tuberculosis	1,128	1,153	220	217	487	560	68	90	24	17	1,927	2,037
Syphilis	1,023	857	64	80	91	201	7	21	7	25	1,192	1,184
Gonorrhoea	967	133	33	0	106	1	5	0	3	0	1,114	134
Chancroid	68	0	1	0	12	0	0	0	0	0	81	0
Cerebro-Spinal Meningitis	12	35	2	1	3	9	1	2	0	0	18	47
Piliomyelitis	4	2	1	0	2	2	0	2	0	1	7	7
Total	6,759	6,503	1,397	1,404	3,835	3,711	646	668	195	191	12,832	12,477

MONTHLY METEOROLOGICAL SUMMARY.

JUNE, 1914.

Day	Temperature Degrees Fahrenheit			Moisture			Wind			Actual Hours Sunshine
	Max.	Min.	Mean	Relative Humidity	Depth in Inches Rain	Depth in Inches Snow	Av'ge H'rly Vel. Miles	Prevailing Direct'n	Max. Vel. Miles	
M 1	76	63	70	59	0	0	6.2	SW	13 SW	0.2
T 2	75	59	67	45	0	0	5.5	NW	12 NW	14.4
W 3	80	59	70	45	0	0	6.8	SW	13 SW	8.1
T 4	70	63	66	81	.74	0	7.0	SW	17 S	0
F 5	73	57	65	47	0	0	8.5	NW	16 NW	15.0
S 6	77	53	65	44	0	0	5.0	NW	9 SW	15.0
S 7	85	57	71	61	.09	0	7.1	SW	13 SW	13.4
M 8	86	62	74	81	.02	0	4.9	W	13 NE	4.0
T 9	68	57	62	65	0	0	7.6	NE	14 NE	10.4
W 10	85	57	71	75	0	0	6.8	SW	13 SW	8.8
T 11	89	68	78	45	0	0	5.5	NW	12 W	14.2
F 12	91	71	81	53	0	0	6.8	NW	14 NW	15.0
S 13	83	64	74	53	0	0	4.8	NW	11 SE	11.1
S 14	76	65	70	54	0	0	4.5	NW-S	8 SW	5.5
M 15	67	58	62	86	.50	0	4.8	S	8 S	3.3
T 16	70	55	62	52	.02	0	10.8	NW	22 NW	14.1
W 17	76	52	64	49	0	0	6.3	NW	11 S	15.1
T 18	73	57	65	70	0	0	5.7	S	12 SE	15.1
F 19	69	59	64	89	.24	0	4.6	NE-SE	11 NW	0.3
S 20	71	49	60	47	0	0	9.3	NW	18 NW	15.1
S 21	75	55	65	63	0	0	4.3	S-SW	12 S	2.7
M 22	69	62	66	86	.08	0	3.1	NE	6 NE	0
T 23	76	63	70	86	...	0	3.7	SE	8 SE	2.7
W 24	87	63	75	81	.08	0	4.1	SE	13 N	8.7
T 25	92	71	82	58	.02	0	6.4	NW	14 W	14.6
F 26	83	68	76	59	0	0	4.8	NW	11 S	14.0
S 27	78	64	71	80	.09	0	4.8	NE	12 NE	3.8
S 28	65	58	62	96	.05	0	7.4	NE	13 E	0
M 29	80	58	69	74	.13	0	7.3	W	14 W	6.5
T 30	76	61	68	64	0	0	7.6	W	15 NW	11.8
						0				
Month Mean	77.4	60.3	68.8	65	Total 2.06	Total 0	6.1	Prevailing NW	Maximum 22 NW	Total 262.9

NOTE—In rain column † stands for melted snow water.

DIRECTORY OF THE DEPARTMENT OF HEALTH.

OFFICES.

Headquarters, S. W. corner Centre and Walker Streets, Manhattan.

Telephone—6280 Franklin.

Borough of The Bronx....3731 Third Avenue.....Telephone 1975 Tremont.
Borough of Brooklyn.....Flatbush Ave. and Willoughby St...Telephone 4720 Main.
Borough of Queens.....372-374 Fulton St., Jamaica, L. I....Telephone 1200 Jamaica.
Borough of Richmond.....514-516 Bay St., Stapleton, S. I....Telephone 440 Tompkinsville.

Office Hours—9 a. m. to 5 p. m. Saturdays, 9 a. m. to 12 m.

HOSPITALS FOR CONTAGIOUS DISEASES.

Manhattan.

Willard Parker Hospital. Foot of East 16th Street. Telephone 1600 **Stuyvesant.**

The Bronx.

Riverside Hospital. North Brother Island. Telephone 4000 Melrose.

Brooklyn.

Kingston Avenue Hospital. Kingston Ave. and Fenimore St. Tel. 4400 **Flatbush.**

LABORATORIES.

Diagnosis Laboratory, Centre and Walker Streets. Telephone, 6280 Franklin.
Serological Laboratory, Centre and Walker Streets. Telephone, 6280 Franklin.
Research Laboratory. **Chemical Laboratory.**
Vaccine Laboratory. **Drug Laboratory.**
Foot of East Sixteenth Street. Telephone 1600 Stuyvesant.

INFANTS' MILK STATIONS.

Manhattan.

1. 172 East 3d Street
2. 513 East 11th Street
3. 281 Avenue A
4. 240 East 28th Street
5. 225 East 107th Street
6. 241 East 40th Street
7. 174 Eldridge Street
8. Vanderbilt Clinic
9. 326 East 11th Street
10. 114 Thompson Street
11. 315 East 112th Street
12. 244 Mulberry Street
13. 508 West 47th Street
14. 78 Ninth Avenue
15. 421 East 74th Street
16. 205 East 96th Street
17. 209 Stanton Street
18. 2287 First Avenue
19. 108 Cherry Street
20. 122 Mulberry Street
21. 207 Division Street
22. 73 Cannon Street
23. 110 Suffolk Street
24. 96 Monroe Street
25. 251 Monroe Street
26. 289 Tenth Avenue
27. 74 Allen Street

Brooklyn.

1. 268 South 2d Street
2. 660 Fourth Avenue
3. 208 Hoyt Street
4. 176 Hudson Avenue
5. 2346 Pacific Street
6. 184 Fourth Avenue
7. 359 Manhattan Avenue
8. 49 Carroll Street
9. 69 Johnson Avenue
10. 233 Suydam Street
11. 329 Osborne Street
12. 126 Dupont Street
13. 651 Manhattan Avenue
14. 185 Bedford Avenue
15. 296 Bushwick Avenue
16. 994 Flushing Avenue
17. 176 Nassau Street
18. 129 Osborn Street
19. 698 Henry Street
20. 552 Sutter Avenue
21. 167 Hopkins Street
22. 604 Park Avenue
23. 239 Graham Avenue
24. 49 Amboy Street

The Bronx.

1. 511 East 149th Street
2. 1354 Webster Avenue.

Queens.

1. 114 Fulton Avenue, Astoria, L. I.

Richmond.

1. 689 Bay Street, Stapleton, S. I.

CLINICS FOR SCHOOL CHILDREN

Hours: 2–5 p. m. Saturdays, 9–12 m.

Manhattan—

Gouverneur Slip.....Refraction eye work only.
Pleasant Ave. and 118th St....Refraction eye work. Nose and throat clinic, including operation. Trachoma operative treatment.
164 Second Ave.....Dental work only.
449 East 121st St.....Dental work and treatment of contagious eye disease.
P. S. 144, Hester and Allen Sts.Clinic and classes for chronic contagious eye diseases.
P. S. 21, 222 Mott St.....Clinic and classes for chronic contagious eye diseases.

CLINICS FOR SCHOOL CHILDREN—Continued

The Bronx—

580 East 169th St.....Nose and throat clinic including operative treatment. Treatment of contagious eye disease. Refraction eye work. Dental work.

Brooklyn—

330 Throop Ave.....Nose and throat clinic including operative treatment. Treatment of contagious eye disease. Refraction eye work. Dental work.

1249 Herkimer St.....Nose and throat clinic including operative treatment. Contagious eye disease treatment. Refraction eye work. Dental work.

124 Lawrence St.....Nose and throat clinic including operative treatment. Contagious eye disease treatment. Refraction eye work. Dental work.

Richmond—

689 Bay St., Stapleton.....Dental work only.

DIAGNOSTIC CLINICS FOR VENEREAL DISEASES.

Manhattan.

Centre and Walker Streets. **Week days, 9 to 10 a. m.**

307 West 33d Street. **Wednesdays, 8 to 9 p. m.**

Brooklyn.

29 Third Avenue. Week days, 9 to 11 a. m. Tuesdays and Fridays, 8 to 9 p. m.

CLINIC FOR THE PASTEUR TREATMENT OF RABIES.

Manhattan.

Center and Walker Streets. Week days, 1 to 4 p. m.

Brooklyn.

29 Third Avenue. Week days, 11 a. m. to 2 p. m.

Sundays and Holidays (for Manhattan cases only) 10 a. m. to 12 m.

The Bronx—Third Avenue and St. Paul's Place. Daily including Sundays and Holidays, 11 a. m. to 1 p. m.

Queens—Cases attend Manhattan Clinics.

Richmond—Cases attend Manhattan Clinics.

TUBERCULOSIS CLINICS.

Manhattan.

West Side Clinic, 307 West 33d Street. Telephone 3471 Murray Hill.

Lower East Side Clinic, 111 East 10th Street.

Middle East Side Clinic, 229 East 57th Street.

Harlem Italian Clinic, 420 East 116th Street. Telephone 237 5 Harlem.

Southern Italian Clinic, 22 Vandam Street. Telephone 412 Spring.

Day Camp, Ferryboat "Middletown," foot East 91st Street. Telephone 2957 Lenox.

The Bronx.

Northern Clinic, St. Pauls Place and 3d Avenue. Telephone 1975 Tremont.

Southern Clinic, 493 East 139th Street. Telephone 5702 Melrose.

Brooklyn.

Main Clinic, Fleet and Willoughby Streets. Telephone 4720 Main.

Germantown Clinic, 55 Sumner Avenue. Telephone 3228 Williamsburg.

Brownsville Clinic, 64 Pennsylvania Avenue. Telephone 2732 E. N. Y.

Eastern Dist. Clinic, 306 S. 5th Street, Williamsburg. Telephone 1293 Williamsburg.

Bay Ridge Clinic, 215 60th Street. Telephone 2434 Sunset.

Parkville Clinic, 974 West Street. Telephone 1866 Bath Beach.

Day Camp, Ferryboat "Rutherford," foot of Fulton Street. Telephone 1530 Main.

Queens.

Jamaica Clinic, 10 Union Avenue, Jamaica. Telephone 1386 Jamaica.

Flushing, 110 Broadway, Flushing. Telephone, 731 Flushing.

Richmond.

Richmond Clinic, Bay and Elizabeth Streets, Stapleton. Telephone 1558 Tompkins.

SANATORIUM FOR TUBERCULOSIS.

OTISVILLE, ORANGE COUNTY, N. Y. (via Erie Railroad from Jersey City). Telephone 13 Otisville.

TUBERCULOSIS HOSPITAL ADMISSION BUREAU.

Maintained by the Department of Health, the Department of Public Charities, and Bellevue and Allied Hospitals, 426 First Avenue. Telephone 8667 Madison Square. Hours 9 a. m. to 5 p. m.

PRESS OF CLARENCE S. NATHAN, 241-245 WEST 37TH ST., N. Y. 402 1-14-2,000 (N)

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MONTHLY BULLETIN

OF THE

DEPARTMENT OF HEALTH

OF THE

CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

RABIES IN THE CITY OF NEW YORK

ITS SUPPRESSION A CIVIC DUTY

PUBLISHED MONTHLY BY THE DEPARTMENT OF HEALTH
149 CENTRE STREET
NEW YORK, N. Y.

BOARD OF HEALTH.

S. S. GOLDWATER, M. D.,
Commissioner of Health and President of the Board.

ARTHUR WOODS.....*Police Commissioner.*

JOSEPH J. O'CONNELL, M. D.....*Health Officer of the Port.*

EUGENE W. SCHEFFER, *Secretary.*

MONTHLY BULLETIN
OF THE
Department of Health of the City of New York
All communications relating to the publications of the Department of Health should be addressed to the Bureau of Public Health Education, 139 Centre Street, New York.

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DISEASE MENACE FROM OUR DOMESTIC ANIMALS.

By
Dr. Horace Greeley,
Bureau of Public Health Education.

Diseases of the lower animals are rarely brought to the attention of the general public except when some unusual epidemic among them threatens financial disaster to those engaged in the particular industry concerned. However, the present extensive prevalence among them of an infectious malady, foot-and-mouth disease, which caused the temporary closing of the Chicago stock yards and excited unusual activity among the officials of the federal and state governments charged with the supervision of such animals, has received so much attention from the lay press that everyone has been interested. Concern has been caused, first, as to the possible danger of transmission to man, and again, as to the effect upon the price of meat and milk and milk products from the destruction of so many animals as an extensive epidemic might involve.

Since attention has thus been drawn to the subject the occasion is inviting to explain what is known of this disease and its dangers, together with a general review of those maladies with which we know our domestic animals to be frequently afflicted, and which we may acquire from them.

Foot-and-Mouth Disease.

Foot-and-mouth disease is about as contagious among cattle as measles is among children, so that when one case occurs in a herd, even if it be removed so soon as unmistakable evidence of its nature appears, it is rare that a large percentage of the animals do not develop symptoms within a few days thereafter. Ordinarily, the first signs are those such as a child would exhibit at the onset of almost any illness: feverishness, refusal to eat or to move about. In a day or so, if the animal's mouth be examined, numerous little blisters may be found upon the lining of the lips, cheeks and along the gums. These frequently become very numerous, and the animal's mouth then hangs open and continually dribbles saliva. Similar blisters appear about the same time on the feet, just above the hoof, and give rise to so much pain that the animal frequently lies around on its side and refuses to rise. The udder of a cow suffering from the

disease is very commonly involved in the eruption, and it is then that the milk is particularly apt to contain the infectious agent. Directly on account of the illness, and indirectly through the deprivation of food, since the mouth inflammation prevents eating, the animals lose weight rapidly and sometimes die from exhaustion. However, the disease is not very fatal, and, if allowed to run its course, usually subsides in about a month. But, as it is so contagious and so crippling and exhausting to the animals affected, which are often permanently lamed, besides there being some danger to man from possible transmission of the malady, it is judged most economical and safe to destroy all animals so soon as they develop the disease.

Practically all of the domestic animals have been known to acquire foot-and-mouth disease—the sheep, horse, hog, goat, dog, cat, and even the barnyard fowl, are all susceptible, and the three last have frequently been the means of conveying the infection from one farm to another. Although the germ responsible for the disease has not been discovered, its infectious nature is apparent, both from the manner of its spread and the ease with which it may be inoculated into well animals. Such inoculation has frequently been practiced in Europe by rubbing a little of the mucus taken from the mouth of a diseased animal over the lips of the as yet unaffected ones in order to hasten the spread of the malady, and following the proceeding about 75 per cent. of all cattle take sick, but, as a rule, with a mild form of the disease. The advantage claimed for this, as against destruction or quarantine of the ailing animals, is that once exposed such a large percentage of a herd is certain to eventually be infected, one or more individuals at a time, from the latest case, that destruction proves very costly. Further, if each animal is cared for as it develops the disease through contagion, the trouble of quarantine, of separate care of each animal as it takes sick, and of the long drawn out course of an extensive epidemic is much greater than is required in dealing with the shorter—this since all susceptible animals are sick at the same time—and generally milder scourge presented as the result of the general inoculation described. Beyond comfortable stabling, careful feeding, and, perhaps, daily washing out of the animal's mouth, nothing has been discovered, as yet, in the way of treatment.

The method adopted in this country of controlling the infection is, first of all, vigilance to detect the first case or cases developing, and then to destroy the animal and to isolate all others exposed, extending the quarantine to the entire farm, dairy, or stock yards, and destroying in turn all the animals that subsequently develop it. Small animals, such as dogs, cats and chickens, are killed at once in order to avoid possible dissemination through them. Disinfection of stable or yard, wherein a case has been, is sometimes performed, or rather attempted, but the ordinary processes of drying and the action of sunlight soon effect the same object—it was for this purpose that the Chicago stock yards were emptied and held so for a number of days.

To man the disease is only slightly contagious, and if an individual should develop it he might not even be aware of the fact

unless he kept a careful watch for symptoms, which in such a case are usually confined to a few blisters in the mouth which subside and disappear in a few days. It is very improbable that a person could contract foot-and-mouth disease from eating the meat of a diseased animal, since cooking would destroy all germs that might exist therein, and the same is true of milk when pasteurized or boiled. Raw, unheated milk, if from a cow suffering from the malady, might, of course, carry the germs, but even then it is extremely improbable that any consumer would contract the disease, owing to man's high resistance, which almost reaches immunity. Quite a good many cattle, including milch cows, have recently been found to be so affected, and although many people must have drunk raw milk derived from these animals while the subjects of active infection, yet no one has been the worse off therefor.

Tuberculosis.

So much has been written about tuberculosis in cattle and the danger that milk drinkers, especially children, run from the use of milk from diseased animals, that little need be recorded here. For a time the subject of dispute, it is now universally recognized that bovine tuberculosis may be conveyed to man, and since milk and its products are the only materials derived from cattle which are commonly consumed raw, the danger of possible transmission to him is concerned with such use. It seems that the young are particularly susceptible to this form of tuberculosis, and it has been calculated that about 3 per cent. of infants dying from tuberculosis have contracted the disease from milk infection. This has been determined by observation of the type of tubercle bacillus concerned. Butter, when fresh especially, is apt to contain a few disease producing organisms that were in the milk from which it was made, since they are known to be caught in, and rise with, the cream, and all conditions in it are suitable for the survival of the germs indefinitely. Similar possibilities, of course, exist in the case of cheese, which is usually made from the whole milk, often of inferior quality to that sold for drinking purposes.

Tuberculosis is widespread among cattle. The National Department of Agriculture (Farmer's Bulletin 473) says:

"A serious percentage of the dairy cows of the continent are affected, and the disease is found in even a larger percentage of dairy herds. The disease is commoner in some regions than in others. It is no uncommon thing to find as many as 70 or 80 per cent. of the cows in a herd diseased. These animals will be in various stages of the disease, some recently infected showing no sign of ill health, others badly diseased, but outwardly appearing healthy, while a few are evidently breaking down and wasting away."

Tuberculosis is also quite common among hogs since the public slaughter house records show that a large percentage of such animals killed, have the characteristic tubercles. All of the domestic animals are subject to tuberculosis, both of bovine and of human source, and any one that had an "open" disease, one in which discharges containing the germs reach the exterior, would be a menace to all around.

REGULATIONS GOVERNING THE GRADES AND DESIGNATION OF MILK AND CREAM WHICH MAY BE SOLD IN THE CITY OF NEW YORK.

The following classifications apply to milk and cream. The regulations regarding bacterial content and time of delivery shall not apply to sour cream.

Grades of Milk or cream which may be sold in the City of New York	Definition	Tuberculin Test and Physical Condition	Bacterial Contents	Necessary Scores for Dairies Producing	Time of Delivery	Bottling	Labeling	Pasteurization
GRADE A:								
Milk or Cream (Raw).	Grade A milk or cream (raw) is milk or cream produced and handled in accordance with the minimum requirements, rules and regulations as herein set forth.	1. Only such cows shall be admitted to the herd as have not reacted to a diagnostic injection of tuberculin and are in good physical condition. 2. All cows shall be tested annually with tuberculin and all reacting animals shall be excluded from the herd.	Grade A milk (raw) shall not contain more than 60,000 bacteria per c. c. and cream more than 300,000 bacteria per c. c. when delivered to the consumer or at any time prior to such delivery.	Equip....25 Meth.....50 — Total...75	Shall be delivered within 36 hours after production.	Unless otherwise specified in the permit this milk or cream shall be delivered to the consumer only in bottles.	Outer caps of bottles shall be white and shall contain the words Grade A, Raw, in black letters in large type, and shall state the name and address of the dealer.	

REGULATIONS GOVERNING THE GRADES AND DESIGNATION OF MILK AND CREAM, ETC.—Continued.

Grades of Milk or cream which may be sold in the City of New York	Definition	Tuberculin Test and Physical Condition	Bacterial Contents	Necessary Scores for Dairies Producing	Time of Delivery	Bottling	Labeling	Pasteurization
Milk or Cream (Pasteurized).	Grade A milk or cream (pasteurized) is milk or cream handled and sold by dealers holding permits therefor from the Board of Health, and produced and handled in accordance with the requirements, rules and regulations as herein set forth.	No tuberculin test required but cows must be healthy as disclosed by physical examination made annually.	Grade A milk (pasteurized) shall not contain more than 30,000 bacteria per c. c. and cream (pasteurized) more than 150,000 bacteria per c. c. when delivered to the consumer or at any time after pasteurization and prior to such delivery. No milk supply averaging more than 200,000 bacteria per c. c. shall be pasteurized for sale under this designation.	Equip....25 Meth.....43 — Total...68	Shall be delivered within 36 hours after pasteurization.	Unless otherwise specified in the permit this milk or cream shall be delivered to the consumer only in bottles.	Outer caps of bottles shall be white and shall contain the words Grade A in black letters in large type, date and hours between which pasteurization was completed; place where pasteurization was performed; name of the person, firm or corporation offering for sale, selling or delivering same.	Only such milk or cream shall be regarded as pasteurized as has been subjected to a temperature averaging 145 deg. Fahr. for not less than 30 minutes.

REGULATIONS GOVERNING THE GRADES AND DESIGNATION OF MILK AND CREAM, ETC.—Continued.

Grades of Milk or cream which may be sold in the City of New York	Definition	Tuberculin Test and Physical Condition	Bacterial Contents	Necessary Scores for Dairies Producing	Time of Delivery	Bottling	Labeling	Pasteurization
GRADE B: Milk or Cream (Pasteurized).	Grade B milk or cream (pasteurized) is milk or cream produced and handled in accordance with the minimum requirements, rules and regulations herein set forth and which has been pasteurized in accordance with the requirements and rules and regulations of the Department of Health for pasteurization.	No tuberculin test required but cows must be healthy as disclosed by physical examination made annually.	No milk under this grade shall contain more than 100,000 bacteria per c. c. and no cream shall contain more than 500,000 bacteria per c. c. when delivered to the consumer or at any time after pasteurization and prior to such delivery. No milk supply averaging more than 1,500,000 bacteria per c. c. shall be pasteurized in this city for sale under this designation. No milk supply averaging more than 300,000 bacteria per c. c. shall be pasteurized outside of this city for sale under this designation.	Equip....20 Meth.....35 — Total...55	Milk shall be delivered within 36 hours and cream within 48 hours after pasteurization.	May be delivered in cans or bottles.	Outer caps of bottles containing milk and tags affixed to cans containing milk or cream shall be white and marked "Grade B" in bright green letters in large type, date pasteurization was completed place where pasteurization was performed, name of the person, firm or corporation offering for sale, selling or delivering same. Bottles containing cream shall be labeled with caps marked "Grade B" in bright green letters, in large type and shall give the place and date of bottling and shall give the name of	Only such milk or cream shall be regarded as pasteurized as has been subjected to a temperature averaging 145 deg. Fahr. for not less than 30 minutes.

REGULATIONS GOVERNING THE GRADES AND DESIGNATION OF MILK AND CREAM, ETC.—Concluded.

Grades of Milk or cream which may be sold in the City of New York	Definition	Tuberculin Test and Physical Condition	Bacterial Contents	Necessary Scores for Dairies Producing	Time of Delivery	Bottling	Labeling	Pasteurization
							person, firm or corporation offering for sale, selling or delivering same.	
GRADE C: Milk or Cream (Pasteurized). (For cooking and manufacturing purposes only).	Grade C milk or cream is milk or cream not conforming to the requirements of any of the subdivisions of Grade A or Grade B and which has been pasteurized according to the requirements and rules and regulations of the Board of Health or boiled for at least two (2) minutes.	No tuberculin test required but cows must be healthy as disclosed by physical examination made annually.	No milk of this grade shall contain more than 300,000 bacteria per c. c. and no cream of this grade shall contain more than 1,500,000 bacteria per c. c. after pasteurization.	Score 40	Shall be delivered within 48 hours after pasteurization.	May be delivered in cans only.	Tags affixed to cans shall be white and shall be marked in red with the words "Grade C" in large type and "for cooking" in plainly visible type, and cans shall have properly sealed metal collars, painted red on necks.	Only such milk or cream shall be regarded as pasteurized as has been subjected to a temperature averaging 145 deg. Fahr. for not less than 30 minutes.

NOTE.—Sour milk, buttermilk, sour cream, kumyss, matzoon, zoolac and similar products shall not be made from any milk of a less grade than that designated for "Grade B" and shall be pasteurized before being put through the process of souring. Sour cream shall not contain a less percentage of fats than that designated for cream.

No other words than those designated herein shall appear on the label of any container containing milk or cream or milk or cream products except the word "certified" when authorized under the State laws.

Prophylaxis.

Methods to control and eradicate tuberculous disease of cattle have to do with the detection, mainly through the use of the tuberculin test, and slaughtering of all infected animals. General sanitation is, of course, to be applied to every herd, but the main thing is to keep constant watch lest infection develop or be introduced from without.

Since possible transmission to man is mainly through milk, and since heating of this is known to destroy any tubercle bacilli contained therein, the requirements are obvious: Supervision of milk production and handling and proper pasteurization.

The accompanying table illustrates how the milk supply may be so regulated and controlled.

Other Milk Borne Diseases.

Epidemics of sore throat, septic sore throat as it is called in contradistinction to that of diphtheria, have been frequently caused by the dissemination in the milk of germs from an inflammation of the cow's teats or from a septic sore throat in man and the way in which such conditions may pass to, as well as from, the cow, was well illustrated under my own observation, several years ago, when all of three cows for which I had hired a new milker developed boils on their milk-bags within three days after his advent. Investigation showed a crop of similar nature, containing the same germ, on the back of his neck. He said that he had each day squeezed one or more of his boils so that gross contamination of his hands was evidently responsible.

Diseases peculiar to man, as typhoid, the organisms of which get into the milk in handling, not being transmitted from animals are not considered here. However, it may be stated that thorough pasteurization destroys the germs of all diseases that milk ever conveys.

Glanders.

Far more dangerous to man than foot-and-mouth disease, another infection of animals is present, commonly and constantly, in all large cities—glanders of horses. This disease affects so many animals that in New York City 1,153 horses were destroyed on its account during the past year. The germ of this malady is very like the typhoid bacillus, and is equally tenacious of life when discharged from a disease focus in the nose or lung of a horse. Horse-troughs, exchanged bits, and common drinking buckets—as with common drinking cups, the frequent transmitter of human disease—watering-fountains, upon the surface of whose contained water we so often see floating foam, a little of which was contributed by each horse drinking therefrom, are all means by which the disease is transmitted. Besides affecting the nose, the germs often invade the lungs, bronchial tubes and the glands of the mouth and neck, and every time a diseased horse sneezes or coughs he is very apt to spray the germs around. Some-

times the disease breaks out on the animal's skin and gives rise to large pustules, usually located over the chest. No effective treatment has been found for the disease, and, as it is usually progressive, crippling a horse more and more, and highly contagious, considerably so even to man, the health authorities never temporize, but destroy all diseased animals so soon as discovered. Such detection was formerly very difficult, but recently, since a preparation of the glanders bacillus, mallein, similar to tuberculin, has come into use, the procedure has been much simplified. A little of this preparation is rubbed over the animal's everted eyelid, and, if the horse be infected (in at least 80 per cent. of all cases) within a day or two a marked congestion and reddening of the eyelid develops. This never occurs in any but an animal in which the glanders bacillus is growing, and the method is now in universal use throughout the world, and has enabled the authorities to detect early cases which might have gone around spreading the disease for many months before determinable by other methods.

Another test (complement fixation) involving much greater labor and requiring the conveniences of a well-equipped laboratory, to which a specimen of the suspected animal's blood is sent, is considered to detect all cases of glanders to the extent of at least 90 per cent. This is similar to the Wassermann test for syphilis, and is used in New York City extensively.

All large cities in which many horses are kept show each year a few cases of the disease among the human population. In New York City about 3 persons contract it each year. These are usually hostlers, coachmen and others who come into close contact with many horses.

Several years ago I saw the body of a truckman who had died from the malady, contracted from his horse. He had suffered, as is usual, with a preliminary "cold" and bronchitis, followed by symptoms such as most infectious diseases present: chills, fever, prostration, and, finally, large pustules, or abscesses, developed on his body, particularly over his chest. Death followed as a result of general poisoning from the infectious agent, as is usually the case with most germ diseases. Glanders is fatal to about 75 per cent. of all persons who contract it. Lions and tigers, fed, as they are in the Bronx Zoo, on horse-flesh, have been known to develop the malady.

Department Measures Dealing with Glanders.

Cases of glanders are reported by private veterinarians, or by those in the employ of the Department, as the result of an inspection made upon complaint. If a suspected case be evidently one of glanders, as determined by physical examination or by laboratory test of blood (made in doubtful cases) the horse is immediately separated from others and destroyed, after the following procedure: The owner is asked to sign a form provided by the State Department of Agriculture authorizing the destruction of the animal after appraisal, which he usually does without objection. However, should he refuse, the horse is condemned by the Department as a public menace and is destroyed without compensation. If the authoriza-

tion be given, the animal is at once appraised by the agents of the said State Department of Agriculture and is then destroyed (shot) by a patrolman of the Sanitary Squad, and his body removed via the Offal Dock to Barren Island.

When the glandered horse shows distinct clinical symptoms, the owner receives 50 per cent. of its appraised value. When no clinical symptoms are present, but the post-mortem examination reveals generalized lesions of glanders the owner receives 50 per cent.; when only local lesions are found post-mortem, the owner receives 80 per cent. If no microscopic lesions are found, the owner receives 100 per cent., or the full amount appraised. Payment is made by the State.

After a glandered horse has been removed from a stable, the stall is immediately disinfected and renovated. The flooring and all salt-racks and water-troughs, if of wood, are destroyed, and the stall is washed down with a solution of washing soda. The manger, stable utensils and harness are washed with a strong solution of the same; halters, blankets and feed bags and any other articles that may have been grossly contaminated by the glandered horse are destroyed.

Whenever a case of glanders occurs, the Department veterinarian takes a specimen of blood for examination from every horse in that particular stable, as all have been exposed to the contagion. If, when examined, the blood gives positive reaction, another test, the conjunctival mallein test, is made to verify the diagnosis. If either of these tests is doubtful, a third test, the subcutaneous mallein test, is made, thus insuring a correct diagnosis. This last mentioned test is similar to the tuberculin test as made in the case of cattle, and consists in the hypodermatic administration of a full dose of mallein, to which any animal, with even a very small focus of active disease, responds with fever and general signs of illness. When any horse is found to be glandered the procedures previously described are carried out.

The following statistics show the importance of this work:

Glanders in Horses, New York City, 1914.

Horses examined	48,943
Horses tested (complement fixation test)	7,700
Horses tested Mallein	1,552
Horses vaccinated	8
Horses condemned account of glanders	1,153

Vaccinia.

Vaccinia, or smallpox of cows, while a very famous, is now also a rather rare disease. Jenner discovered the utility of vaccination through noting the belief among English dairymaids that those of them whose hands had acquired from the cows a disease that sometimes caused a pus-forming eruption on the milk-bag enjoyed entire immunity from smallpox, which was at that time both frequent and fatal. Nowadays it is difficult to find a cow suffering from an attack of the malady not purposely inoculated.

Lumpy-Jaw.

Another disease of cattle, not infrequent in the southwest, is lumpy-jaw, or actinomycosis. This malady is particularly interesting since we know the usual habitat of its causative germ to be grain and straw, and only in a very few instances are disease producing microbes known to live and grow in nature on other than the animals which they infect. This disease begins usually in the lip, tongue or the gum of the animal from infection while feeding; and it may be acquired by man, most frequently producing an inflammatory condition of the lung, of chronic nature, sometimes contracted directly from the mouth discharges of a diseased animal, or, indirectly, through the inhalation of contaminated dust. The disease takes a long time to develop, but, as with tuberculosis, which it resembles in some particulars, it takes a correspondingly long time to get rid of it, and sometimes all efforts are fruitless. Animals found to be suffering from actinomycosis are destroyed.

Anthrax.

A malady of both cattle and sheep, caused by the largest known of all the disease-producing bacteria is anthrax, sometimes called malignant pustule when contracted by man, from the appearance and danger of the initial lesion or spot, usually on the hand, neck or face, where the infection has taken hold. It has also been named wool-sorters' disease, since combers and handlers of fresh sheep's wool have frequently become inoculated.

The disease usually produces in the susceptible animals a septicaemia, in which the blood soon teems with myriads of the organisms with a uniformly fatal result. Bodies of cattle and sheep dead of the disease harbor, of course, an enormous amount of infectious material which retains its activity, imparting contagion to the soil and any substances or animals coming into contact therewith, over at least many months. This is due to the formation by the germ of the disease of a spore, or seed, which is as resistant to the agents which in nature usually destroy bacterial life as the seeds of the native plants are to our winter. It has been stated that even when the carcasses of anthrax infected animals have been buried, earth worms crawling over them and then coming to the surface may so contaminate a pasture with the spores that grazing animals may contract the malady. Whether the germ grows apart from the animal body or not is uncertain, but Farmer's Bulletin, 459, U. S. Department of Agriculture states:

> "Nevertheless, the fact remains that certain circumscribed areas of ground remain dangerous to stock from year to year. It is still an unsettled question whether the anthrax germs grow and multiply each season upon infected lands when conditions of moisture and warmth become favorable or whether the ground becomes infected at some certain time with bacilli, from which spores develop, which remain near the surface of the ground for years or until taken up by some susceptible animal."

Anthrax is a quite fatal disease on some large sheep and cattle ranges, especially in South America, and hides and wool from infected animals often reach the market.

The following quotation, given in the aforementioned Bulletin, shows how traffic in hides aids in the dissemination of the malady:

> "Since 1892 anthrax has prevailed along the banks of the Delaware River for a distance of 40 miles in New Jersey and Delaware, destroying from 70 to 80 per cent. of the farm stock. The great morocco industry on this river draws infected hides from India, China, Russia, Africa and South America, and the spores are carried and distributed by the hides."—*Professor Law.*

Workmen handling the hides may contract the disease, as may likewise the combers of fresh sheep's wool, who in time past have been so often attacked that it has been called wool-sorters' disease, as previously mentioned. This is because the dust loosened in the combing process from the wool of infected sheep is very apt to contain some spores in condition to at once develop into complete germs and begin rapid multiplication, if they reach suitable soil, as within the lungs of the workmen, if inhaled, or in the intestines, if swallowed.

However, comparatively few persons ever contract anthrax, but to those who do it is quite dangerous, since about 25 per cent. die.

Man's comparative freedom from attack by the disease has not, however, always been maintained, since in connection with a severe epidemic among the cattle of southern Europe in 1613, over 60,000 human deaths from the malady are said to have occurred.

Some few animals exposed to epidemics, and others of localities in which the disease is constantly present, manifest immunity to anthrax as do likewise all Algerian sheep, a variety of this otherwise most susceptible animal which is entirely immune.

Observing such phenomena, and extending his method of immunizing against chicken-cholera, Pasteur, in 1881, found that by cultivating anthrax bacilli under unfavorable conditions (a temperature of 108.5 Fahrenheit) their ability to produce disease could be gradually lessened and finally destroyed; and that if such organisms were injected into a susceptible animal a diminished susceptibility to the disease would result. As a practical demonstration of the worth of his procedure in preventing anthrax, he once thus vaccinated half of a flock of fifty sheep, and twelve days later inoculated the entire fifty with bacilli of unreduced power from an actual case of the disease. Within two days the unvaccinated twenty-five were all dead, while those protected by his process were alive and well.

In its measures for controlling and attempting to eradicate anthrax, the U. S. Department of Agriculture requires the burning of the bodies of infected animals, or at least their deep burial, and recommends that all infected land be well drained and kept under cultivation for some time, at least before being used for pasturage.

In areas in which anthrax has appeared the vaccination method of prevention is endorsed.

Protection of Man.

This mainly has to do with care in the handling of fresh hides and wool or hair. So in all factories employing such materials,

that by any possibility might harbor the infection, especial precautions are observed to prevent skin abrasions from the fresh hides, as might occur to a workman's cheek or neck when carrying them upon his shoulder. In connection with hides, hair and wool, creation of dust is particularly avoided, since the inhalation of such spores of anthrax as might be thrown into the air, particularly in the combing of wool, might easily give rise to the disease in a worker.

However, the possibility of infectious material reaching the operatives is very remote since the Federal Government carefully guards the importation of hides and hair and wool. Imported hides are required to be sun dried, except in the case of those coming from abbatoirs where such inspection of carcasses as is made serves to detect the disease and prevent the use of the skin. While sun drying may not suffice to destroy every anthrax spore in a hide from a diseased animal, it is known to be more effective than any other procedure applicable to such material, and reduces to a minimum dangerous possibilities.

All hair and wool imported from South America comes in bags, which are required to be whitewashed upon arrival, and the importers are compelled to certify that upon reaching the factory all material is sterilized by being heated in hot water (210 degrees F.) for at least two hours.

Tetanus.

Lockjaw—tetanus—is usually due to the introduction into a deep cut or wound of earth, especially garden earth that frequently contains the germs of this disease, which, like those of anthrax, can form spores, and therfore survive for long periods under adverse conditions. Such germs are so common and plentiful in the intestinal contents of horses, whose dung is commonly employed to fertilize gardens, that we may regard this as a disease contracted indirectly from this animal, although all herbivorous animals harbor the same germ.* The remarkable thing about the disease due to the tetanus bacillus is that although the germ may be introduced deeply into the tissues (it cannot grow exposed to the air) and some slight growth may take place, it soon dies, possibly before the symptoms of the malady appear, but the products of its activity, even though present in the minutest amount, such as 1/100 of a grain, are so very poisonous to certain parts of the brain and spinal cord, which it usually takes some days to reach, that all efforts to neutralize or counterbalance the poison is often vain.

Prophylaxis.

This involves thorough cleansing of all wounds contaminated with dirt, especially fertilized earth or manure, and, where the wound is more than superficial, preferably an injection of tetanus antitoxin, which has proved to be very efficacious as a preventative.

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*The extensive prevalence of tetanus among the soldiers, wounded in the present European War, is ascribed to the contamination of their wounds with soil from a territory, highly cultivated and, consequently regularly and frequently fertilized with horse dung.

Tetanus antitoxin in the treatment of a developed case of tetanus is only valued when given early and intraspinally.*

The Department of Health prepared and distributed for the prophylactic treatment of wounds and of actual cases of tetanus, occurring within the city, antitoxin in accordance with the following table:

Tetanus Antitoxin Distributed, 1914.

No. Vials	Size	Units
4,567	1,500 units	6,850,500
409	3,000 units	1,227,000
559	5,000 units	2,795,000

Trichiniasis.

While few of us come into intimate contact with the hog of the barnyard, one of his diseases frequently reaches us through a practice very common in some parts of Europe, though less frequent here, of eating raw sausage in which meat derived from animals infected with trichinea frequently finds its way. This is a disease whose cause, a minute worm, goes into the resting stage (as a caterpillar into his cocoon) within the animal's muscles, and, when swallowed by man, unkilled by cooking, as in sausage, hatches out, grows to adult state, both male and female, and raises a brood of young which at once penetrate the intestinal wall and make for the muscles. It is this migratory process which forms the painful feature of the malady, and many a case of supposed muscular rheumatism has undoubtedly been due to trichiniasis. Sometimes the disease is so severe as to simulate typhoid fever. There is no effective treatment, but a fatality is rare, notwithstanding an undoubted extensive prevalence.

The Federal meat inspection service long ago abandoned attempts to discover whether all hogs slaughtered for food were free from trichinea, since such determination is impracticable. However, it recently ordered that after November 1st, 1914, no ready-to-eat food preparation containing uncooked pork would be allowed in intra-state commerce. This will go far to protect the public, especially as State governments usually follow Federal lead in such matters, and we may expect to soon have such food exiled from our markets.

In New York City the Department of Health recently (Dec. 31, 1914) made trichiniasis a reportable disease, and in view of its dangers issued (September 26, 1914) the following warning:

Trichiniasis.

Attention is called to the alleged increased prevalence of trichiniasis in the City. A number of cases have been reported to the Department during the past month. While the disease is not one

* In well developed cases of the disease, besides the repeated injections of antitoxin, the army surgeons in Europe are using choral, and some, magnesium sulphate solution hypodermatically.

of those the notification of which is required by the Sanitary Code, the Department will welcome further voluntary reports of cases.

The chief pork and sausage dealers say that several thousand pounds of pork roll (roulade) are eaten raw during the winter months, and that during the warm weather "summer sausage", made half of beef and half of pork, is consumed raw in large quantities under the names of "salame" and "cervelat." Smoked pork, raw, is also in some esteem both as ham and under the name of "nah schinken." Therefore, as it is well known that no examination of a carcass can make sure that the animal was not infected, consumers of these articles are cautioned.

As all medical men know, the severity of the infection is in direct proportion to the number of unkilled embryos swallowed. These liberated from their cysts within the meat by the digestive process, reach the adult state in about three days, and within ten days have produced hundreds of young, which migrate at once, some, of course, escaping with the feces, but most of them penetrating the intestinal wall and so passing on to the muscles. Repeated broods are turned out by the adults which survive in the intestines often as long as two months, but which are the sole source of supply since the young never develop to adult state within the intestines before passing through the muscle cyst stage.

Statistics prove that in this country at least 2 per cent. of all hogs are trichinous, and Osler is authority for the statement that human "post-mortem statistics show that from one-half to 2 per cent. of all bodies contain trichinae."

Although the diagnostic symptoms of muscle pains or soreness followed by oedema of the face are well known, mild cases are likely to be passed by, undistinguished from muscular rheumatism. Even severe cases have been temporarily classed as typhoid, and a strong presumptive diagnosis is usually made before proceeding to blood examination for eosinophilia or to a microscopical search for the young in the intestinal mucus, or in a piece of the patient's muscular tissue excised for the occasion.

Tape-Worms.

Tape-worms are parasites which appear in nature in two stages—one the larval, or caterpillar stage, and the other the adult reproducing, or butterfly stage. Most of the ten or a dozen known varieties occur in the muscles, or meat, of cattle, sheep, hogs, fish, etc., in the larval form, and when such infected, or measly, as it is sometimes called, meat is eaten by man raw, the larvae attach themselves to the side of the intestine and develop into the adult, much as do trichinea. With the tape-worms, however, a single larvum may form a development many yards in length, consisting of numerous links, as a chain, each link being a double sexed individual capable of laying innumerable eggs, which, however, to hatch must reach the intestine of one of the other animals. If successful in this the young worm hatches and migrates to a muscle and awaits its chance for further development, which only arises when the animal is eaten by another. If the parasite were as developed

mentally as the genie freed by the unsuspecting fisherman from his confinement under the seal of Solomon, it would probably become far more impatient than did the monster of the Arabian Nights Tale in awaiting the hour of deliverance.

With one variety of tape-worm, instead of man being the host of the adult, and his meat-producing animals that of the larval form, the proceeding is reversed and man in common with some other animals supplies a nesting place to the larvae, while the adult develops within the intestine of the carnivorous animal, the dog or cat, who at one time, as the wolf or the tiger, was intended by kind nature to feed upon us at least occasionally. One should note in this connection that since the adult lives in the intestines of household pets, and is a constant source of innumerable eggs, that those who handle dogs or cats, or who let them lick their face or hands, may frequently contract an infection which, although comparatively rare in this country among the native born, runs a very obscure course and which may be the cause of much ill health, or even produce fatal results. Of this last variety, an egg when swallowed hatches and the young worm migrates through the wall of the intestine and lodges frequently in the liver or the spleen, though sometimes elsewhere, as in the kidney or the brain, and there gives rise to a cyst, which multiplies as the soap bubbles do at the end of a pipe, till a great mass of multiple sacks is formed which effects harm chiefly through pressure, although a general slow poisoning of the system may apparently be sometimes caused.

Prophylaxis.

Proper cooking of all meat and the avoidance of unnecessary handling of dogs and cats, or at least care to avoid, after such contact, carrying of unwashed hands to food or mouth. Needless to say, such animals should not be allowed to lick the face nor have access to food intended for the table.

Rabies.

Rabies as a disease of the dog is well known, but the fact that a small per cent. of all cases, occurring the country over, in human beings are acquired through the bites of other animals than dogs, is not realized. The bites of wolves, cats, horses, cows and even of skunks have conveyed the malady.

While the germ of this disease has not been positively identified, certain developments within the brain cells of infected animals are constantly present that may actually be one form, or stage, of the micro-organism, and that permit positive diagnosis on microscopical examination. Such diagnosis may be confirmed by the inoculation of a susceptible animal with a portion of the brain from the case in question, since the procedure is uniformly followed by the develment of the disease, if the original animal was infected.

The dog is practically the only source of rabies in our City, although, of course, a cat may occasionally serve. Manifestations of the disease in a dog are not always in line with popular ideas on

the subject, and the animal frequently shows his illness by drowsiness, progressive weakness and paralysis beginning in the hind legs, and neither attempts to bite or to run away. In contrast to this quiet form, in the excited variety, the animal shows great irritability and runs around, frequently away from home, barking and snapping at all, to finally succumb to exhaustion and the progressing paralysis. Until this paralysis has involved the throat muscles there is no difficulty in swallowing, and consequently no fear of water.

The following statistics show the extent to which rabies prevails in New York City:

Rabies in New York City.

	1912	1913	1914
Biting animals proved Rabid.....	294	373	355
Persons bitten, receiving Pasteur treatment...	452	528	509
Deaths from Human Rabies.....	5	8	8

Prophylaxis.

Farmer's Bulletin 449 (U. S. Department of Agriculture) summarizes the

Prevention and Eradication of Rabies.

Sanitary regulations which seek to control the disease effectively by exterminating it among dogs are most likely to prove successful. There is no communicable disease which is more easily prevented or eradicated than rabies. Since the infection is practically always transmitted by a bite, and since the animal which does the biting is almost always a dog, all sanitary measures must be directed to the control of these animals for a sufficient time to cover the incubation period of the disease. It seems inexcusable, therefore, to allow this contagion to be propagated indefinitely, causing untold suffering to the affected animals and menacing the lives of persons, particularly children, who go upon the streets.

The only measures necessary to obtain the desired result are (1) a tax or license for all dogs, with a fee of $2 for males and $5 for females, and the destruction of homeless or vagrant dogs; (2) restraint of all dogs which appear in public places, either by the use of a leash or an efficient muzzle.

In the City the Department of Health has recently provided for the protection of both the public and of the dogs by the following additions to the Sanitary Code:

> Sec. 10. Rabid and vicious animals; Department of Health to be notified; destruction authorized; removal regulated.—Every animal that has rabies or that shows symptoms of rabies, and every animal that has been bitten by another animal affected with rabies, or has been otherwise exposed to such disease shall, by the person owning the same or having possession thereof, be at once confined in some secure place for such length of time as may be necessary for the purpose of determining whether such disease exists or showing that such exposure has not given such animal said disease, and of avoiding all danger

to life or health, and such person shall also, immediately upon discovering or learning any of the aforesaid facts, notify the Department of Health thereof and of the place where such animal is confined. Every animal which is mad or has rabies shall at once be killed by the owner or person having possession thereof, or by the Department of Health, and the body of any animal that has died of such disease, or being suspected of such disease has been killed, shall be at once surrendered to the Department of Health for disposition.

Should a dog bite any person, it shall be the duty of the owner, or person having the same in his possession or under his control, to immediately notify said Department thereof, and surrender said dog to said Department for inspection and observation; and such dog shall be returned to the person from whom the same shall have been received if found not rabid or vicious, and, if found to be rabid, or vicious to such an extent as to be unsafe to be at large, it shall be destroyed by said Department.

When the police or other person or authorities destroy a dog for any of the causes herein mentioned, it shall be his or their duty to immediately notify the Department of Health thereof and of the location of its body, so that the said body may be obtained by the said Department; and it shall be unlawful to remove any dog or animal to which the provisions of this section apply, or the body of any such dog or animal, except as herein provided. (S. C. Sec. 132.)

Sec. 17. Unmuzzled dogs; not permitted in any public place.—No unmuzzled dog shall be permitted at any time to be on any public highway or in any public park or place in the City of New York. (S. C. Sec. 80a.)

If the public health authorities be well seconded by the people final eradication of the disease from the country can easily be effected, just as has been done in England and in Australia. In these countries as a consequence of muzzling of dogs the disease died out, and the interdiction of the importation of such animals from localities not as careful of their citizen's welfare has prevented reintroduction of the malady.

While there is no known cure for rabies, once the disease has developed, the prophylactic vaccination of those recently bitten by rabid animals is effective and is universally employed. This, Pasteur's, preventive treatment is intended to so increase the natural resistance to the germs as to make it impossible for them to develop, should any have been implanted by the bite. It consists of a series of hypodermatic injections (usually six) of suspensions in salt-and-water of the dried and finely ground spinal cords of rabbits which have been fatally inoculated with the disease. Pasteur found that the drying of such a spinal cord gradually reduced the strength of the hydrophobia germs contained, so that all exposed to the air for six days and over could no longer reproduce the malady in the most susceptible animal. Consequently he began his inoculations with a dose of a six-day dried cord, after which each successive dose was prepared from a cord one day fresher.

Hog-Cholera.

Hogs suffer from a well-known disease, hog-cholera, that frequently destroys droves of these animals in the southern states. Besides being transmitted from hog to hog, the carrion-eating turkey-buzzard, after feasting upon a dead animal in one place, may fly to another and there disgorge part of its last meal, when suffering from the effects of gluttony, Heliogabalus like, or when unduly hurried, in order to lighten its weight. Such material may be consumed by a healthy hog which is consequently almost certain to develop the malady. The germ of this disease has frequently been found to be the cause of "food-poisoning" and of some cases of "summer complaint" with man, but whether it has been directly derived from a hog or not is unknown.

Mediterranean Fever.

What is known as Mediterranean fever has been endemic, of continuous occurrence, on the Island of Malta for generations. The British soldiers in the barracks were particularly subject to attack till Sir Patrick Munson discovered that the germ of the disease, a spirillum (?), was most commonly acquired in the milk of goats, which is extensively consumed on the island, and compelled the boiling of all such milk before use. The incidence of the malady at once fell to almost nothing. It was determined, later, that fully 10 per cent. of all the goats in Malta were afflicted with the disease.

Sleeping-Sickness.

The sleeping-sickness of Africa is known to afflict wild animals, such as antelopes and monkeys, and to be transmitted to man through the bite of a fly that feeds on all three, and it is very possible that some of the domestic animals will eventually be found to afford harbor to the germ, a trypanosome, much nearer at hand.

Diphtheria.

As regards statements that animals such as cats, dogs, birds, etc., have been the source of cases of diphtheria in man, this is true only for cats, and of these only one or two cases are on record. The other animals may develop a somewhat similar disease, but it is due to other varieties of germs.

Ringworm.

Ringworm is frequently contracted from cats, or dogs, and infection acquired from an unnoticed patch upon a pet may be the cause of much subsequent annoyance and even suffering to several members of a family.

Bubonic Plague.

The rat, although not a domestic of our seeking, lives in such proximity as to be practically such, and it has been convicted of

responsibility for one of the most dreaded of all diseases, bubonic plague. The microbes of this malady exist in enormous numbers in the glands (which swollen are known as buboes) and even in the blood of such of these animals as become infected, and pass with their blood into the stomachs of their parasite fleas, whenever these insects bite. Inoculation into man occurs through the chance bite of some flea that has lost its rat-host and is driven by starvation to take food otherwise unpalatable. It is very strange to find such prejudices among parasitic insects, but they often exist to such an extent that one will starve to death rather than feed upon that which, perhaps, makes it hold its nose. Besides the rat, guinea pigs and squirrels are susceptible to plague.

The rat has also been accused of being an active agent in the spread of leprosy, since a germ identical with that causing the human malady has been frequently found active in a similar disease of this rodent. Recently, an investigator found that he could produce a cancer-like growth in the stomach of rats by feeding them on cockroaches, but, however, this disease is not thought to be due to a germ.

To Prevent Plague.

Measures to destroy rats, and therefore those which could reduce to a nullity dangers from bubonic plague, are well summarized in Farmer's Bulletin 369, issued by the Federal Department of Agriculture:

Summary of Recommendations.

1. Protection of our native hawks, owls and smaller predatory mammals—the natural enemies of rats.

2. Greater cleanliness about stables, markets, grocery stores, warehouses, courts, alleys and vacant lots in cities and villages, and like care on farms and suburban premises. This includes the storage of waste and garbage in tightly covered vessels and the prompt disposal of it each day.

3. Care in the construction of buildings and drains, so as not to provide entrance and retreats for rats, and the permanent closing of all rat holes in old houses and cellars.

4. The early thrashing and marketing of grains on farms, so that stacks and mows shall not furnish harborage and food for rats.

5. Removal of outlying straw stacks and piles of trash or lumber that harbor rats in the fields.

6. Rat-proofing of warehouses, markets, cribs, stables and granaries for storage of provisions, seed grain and feedstuffs.

7. Keeping effective rat dogs, especially on farms and in City warehouses.

8. The systematic destruction of rats, whenever and wherever possible, by (a) trapping, (b) poisoning, and (c) organized hunts.

9. The organization of rat clubs and other societies for systematic warfare against rats.

VITAL STATISTICS.

Summary for the Month of November, 1914.

In order that a fair comparison be made between the deaths reported during the past month and those of any previous November, it was thought advisable to make comparison between the month in question and the average of the same month for the previous ten years; accordingly the following noteworthy facts are presented:

The deaths from all causes showed a decrease of 1,218, this decrease being distributed in greater or lesser proportion among all the principal causes of death with one exception, organic heart diseases, this fruitful cause of mortality showing an increase of 35 deaths, but if we bear in mind that, upon a great number of certificates of death, organic heart disease and Bright's disease of the kidneys are given as joint causes of death, then the decrease of 130 deaths from organic diseases of the kidneys would wipe out this increase among the organic heart diseases, this latter being given the preference to Bright's disease of the kidneys in making the assignments for statistical tabulation, so that we are justified in concluding that the decrease in the mortality during this month was evidenced in each one of the prominent causes.

The number of deaths from typhoid fever reported during the past month was 30, as against 77 for the decennial average, a decrease of 61 per cent. All the contagious and infectious diseases, including pulmonary tuberculosis, showed a considerably decreased mortality, especially diphtheria and croup, the decrease in this instance being 31 per cent.

For the first time in many years the mortality from cancer and malignant tumors did not increase, the figures showing exactly the same number of deaths, that is 359. Accidental deaths showed a decrease of 21 per cent., suicidal deaths a decrease of 38 per cent. The mortality from homicide was approximately the same as in the previous ten years.

Viewed from the point of age grouping, all ages showed a decreased mortality, especially infants under one year.

The death rate for the month was 12.06, which was a decrease of 0.52 of a point compared with the month of November, 1913.

It is worthy of note that the number of births reported during the month reached the large figure of 10,691 as against 10,434 births reported during the month of November, 1913, an increase of 257. The number of marriages reported during the month was 4,614 against 4,933 in the corresponding month of 1913, a decrease of 319.

During the month of November there occurred within the City 117 deaths of non-residents, a large number of which were of persons who came seeking medical or surgical treatment.

POPULATION, MARRIAGES, BIRTHS AND DEATHS, MARCH, 1914.

Boroughs	Estimated Population† Bureau of the Census	Estimated Population July 1, 1913	Certificates Received and Tabulated			Rate per 1,000 Based on Department Estimate			Corrected Death Rate *
			Marriages	B'ths	D'ths**	Marriages	B'ths	D'ths	
Manhattan..	2,481,997	2,538,606	2,293	5,477	3,981	10.64	25.42	18.48	18.25
The Bronx..	535,877	641,980	265	1,368	817	4.86	25.11	14.99	14.09
Brooklyn....	1,818,128	1,916,655	1,024	4,278	2,512	6.30	26.30	15.44	15.87
Queens.....	340,773	387,444	109	763	443	3.32	23.20	13.17	15.08
Richmond...	94,544	99,186	29	201	163	3.44	23.87	19.36	16.51
City of N. Y.	5,271,319	5,583,871	3,720	12,087	7,916	7.84	25.51	16.70	.....

Boroughs	Manhattan.....17.60 The Bronx.....14.86 Brooklyn.....16.01 Queens.....14.14 Richmond.....18.80 City of N. Y.....16.55	Death Rate March, 1913 for Comparison.

* The death-rate of each Borough is corrected by inclusion of the deaths of its residents in other Boroughs, and exclusion of deaths of residents of other Boroughs within its boundaries.

† The estimate of the Bureau of the Census is based upon the arithmetical method, that of the Department of Health upon the geometrical method of determining the increase in population for post-censal years.

** Includes 119 deaths of non-residents of the City, which, if deducted, would give a death rate for the City of 16.45 per 1,000.

DEATHS ACCORDING TO AGE GROUPS, MARCH, 1914.

Boroughs	All Ages	Under 1 Year	1 Year and under 2	Under 5 Years	5–15 Years	15–25 Years	25–45 Years	45–65 Years	65 Years and over	Colored	Chinese
Manhattan.	3,931	661	197	1028	118	225	836	1015	709	195	4
The Bronx.	768	132	32	203	35	47	147	196	140	11	..
Brooklyn...	2,582	408	112	616	91	157	483	662	573	63	..
Queens.....	496	77	15	114	22	27	97	137	99	7	..
Richmond..	139	18	7	26	4	7	21	32	49	2	..
Cityof N.Y.	7,916	1,296	363	1,987	270	463	1,584	2,042	1,570	278	4

REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

APRIL, 1914.

	Manhattan		The Bronx		Brooklyn		Queens		Richmond		City of New York	
	Apr. 1914	Apr. 1913	Apr. 1914	Apr. 1913	Apr. 1914	Apr. 1913	Apr. 1914	Apr. 1913	Apr. 1914	Apr. 1913	Apr. 1914	Apr. 1913
Total, all causes	3,347	3,336	672	631	2.257	2,180	443	391	141	133	6,860	6,671
1. Typhoid Fever	12	4	1	2	2	6	1	2	..	..	16	14
3. Malarial Fever	1	1	..	..	..	..	..	..	..	..	1	1
4. Smallpox	..	..	..	..	..	..	..	..	..	..	..	..
5. Measles	57	47	10	14	18	19	4	4	..	3	89	87
6. Scarlet Fever	43	28	6	5	25	33	5	10	1	1	80	77
7. Whooping Cough	20	23	2	4	11	8	3	3	..	..	36	38
8. Diphtheria and Croup	90	83	18	18	45	53	8	8	..	1	161	163
9. Influenza	25	18	10	4	16	17	3	5	..	3	54	47
10. Asiatic Cholera	..	..	..	..	..	..	..	..	..	..	..	..
11. Cholera Nostras	..	..	..	..	..	..	..	..	..	..	..	..
12. Other Epidemic Diseases	40	17	5	3	18	16	5	2	1	..	69	38
13. Tuberculosis Pulmonalis	424	449	85	85	263	257	34	40	16	18	822	847
14. Tuberculosis Meningitis	38	41	8	5	21	36	5	5	1	1	73	88
15. Other forms of Tuberculosis	36	40	4	7	21	16	5	6	1	..	67	69
16. Cancer, Malignant Tumor	189	171	49	37	120	101	25	21	10	12	393	342
17. Simple Meningitis	9	21	6	8	9	8	2	5	4	1	30	43
Of which												
17a. Cerebro-Spinal Meningitis	5	15	3	6	4	4	2	1	..	1	14	27
18. Apoplexy, and Softening of the Brain	51	45	10	4	34	20	10	3	3	3	108	75
19. Organic Heart Diseases	361	375	104	95	339	337	67	52	21	19	892	878
20. Acute Bronchitis	21	32	3	5	31	23	..	3	..	..	55	63
21. Chronic Bronchitis	..	2	1	..	8	8	3	..	2	..	14	10
22. Pneumonia (exc. Broncho Pneumonia)	250	244	46	47	205	178	39	22	17	3	557	494
22a. Broncho Pneumonia	269	286	41	32	156	154	22	28	4	7	492	507
23. Other Respiratory Diseases	18	30	5	5	21	19	..	4	..	..	44	58
24. Diseases of the Stomach (Cancer excepted)	15	13	2	7	11	12	1	2	..	2	29	36
25. Diarrhoeal Diseases (under 5 years)	80	112	12	11	38	46	17	8	2	2	149	179
26. Appendicitis and Typhilitis	29	19	5	3	26	22	2	8	1	2	63	54
Hernia, Intestinal Obstruction	35	26	10	11	13	18	4	7	2	..	64	62
28. Cirrhosis of Liver	30	55	1	11	29	24	6	7	2	1	68	98
29. Bright's Disease and Nephritis	206	220	41	50	175	185	31	27	13	14	466	496
30. Diseases of Women (not Cancer)	11	18	5	3	11	13	6	1	..	1	33	36
31. Puerperal Septicaemia	10	7	4	3	13	9	4	3	..	..	31	22
32. Other Puerperal Diseases	28	19	7	5	9	11	3	3	1	1	48	39
33. Congenital Debility and Malformations	215	204	42	36	108	99	30	20	8	2	403	361
34. Old Age	26	22	2	3	13	10	2	1	..	2	43	38
35. Violent Deaths	201	167	27	18	102	78	24	18	10	15	364	296
a. Sunstroke	..	..	..	..	..	..	..	..	..	..	..	..
b. Other Accidents	185	149	27	18	94	75	24	16	9	14	339	272
c. Homicide	16	18	..	..	8	3	..	2	1	1	25	24
36. Suicide	41	34	9	6	11	22	7	2	3	4	71	68
37. All other causes	463	460	91	84	332	320	64	60	18	15	968	939
38. Ill-defined causes	3	3	..	2	3	2	1	1	..	..	7	8

REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, MARCH, 1914.

BOROUGH OF MANHATTAN.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	154.0	9,750	63.0	..	..	1	1	1	9	3	5	....	40	12
2	81.0	933	11.5	1	..	..	..	....	1	....	1	1	8	2
3	95.0	1,915	20.2	..	..	..	..	....	1	1	2	....	8	1
4	83.0	21,336	257.1	..	..	..	..	1	5	2	10	1	38	15
5	168.0	5,666	33.7	..	..	..	..	....	2	1	1	....	20	3
6	86.0	19,670	228.7	..	..	2	..	1	15	8	4	....	54	17
7	198.0	102,101	515.6	..	..	1	3	4	15	14	9	6	117	40
8	183.0	33,182	181.4	..	..	1	..	....	10	11	6	2	58	19
9	322.0	64,909	201.6	..	..	2	2	4	30	15	12	1	162	32
10	110.0	66,439	604.0	1	..	1	1	3	12	6	14	2	86	30
11	196.0	136,548	696.7	..	..	4	..	4	8	4	11	4	84	42
12 e	1,019.0	205,130	201.3	2	..	8	4	18	38	29	47	10	338	148
12 c	1,738.0	332,692	191.4	1	..	5	2	16	52	53	20	8	486	98
12 w	1,106.0	103,532	93.6	..	..	..	..	....	26	50	17	....	283	30
12 n	2,291.0	165,294	72.1	..	..	..	1	1	17	19	9	2	158	19
13	107.0	64,651	604.3	..	..	1	2	4	7	2	6	3	58	29
14	96.0	38,321	399.3	..	..	..	1	4	5	13	16	....	72	31
15	198.0	30,584	154.5	..	..	1	2	....	6	1	5	4	43	18
16	349.0	55,926	160.2	1	..	..	4	3	14	14	4	2	105	19
17	331.0	172,334	520.6	..	..	5	3	12	23	15	19	4	200	67
18	450.0	62,821	139.6	..	..	2	..	5	25	13	13	3	179	63
19	1,481.0	292,950	197.7	..	..	12	4	16	96	46	47	17	563	145
20	444.0	73,308	165.1	..	..	1	..	4	31	25	9	1	158	30
21	411.0	62,345	151.7	..	..	4	1	1	30	15	15	3	166	30
22	1,529.0	209,154	136.8	..	..	2	4	12	57	47	25	6	447	88
Total..	13,226.0	2,331,491	176.3	6	..	53	35	114	535	407	327	80	3,931	1028

BOROUGH OF THE BRONX.

23	4,267.0	268,880	63.0	1	..	5	6	18	58	52	26	6	435	116
24	22,255.8	162,062	7.3	1	..	3	1	10	31	27	31	10	333	87
Total..	26,522.8	430,942	16.2	2	..	8	7	28	89	79	57	16	768	203

BOROUGH OF BROOKLYN.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	233.0	21,851	93.8	..	..	1	..	....	4	6	....	....	45	4
2	97.7	6,894	70.6	..	..	..	..	....	3	1	2	3	17	6
3	161.4	15,910	98.6	..	..	..	1	....	5	1	....	1	32	6
4	111.3	10,477	94.1	..	..	..	..	....	3	1	2	....	29	....
5	119.4	19,401	162.5	..	..	1	1	1	6	4	7	3	39	19
6	302.9	46,437	153.3	..	..	2	..	....	9	2	12	2	74	24
7	458.5	44,037	96.0	1	..	1	..	....	8	5	6	1	72	17
8	1,843.2	82,687	44.9	..	..	5	2	1	18	7	13	2	127	38
9	623.6	50,501	81.0	..	..	2	..	1	13	7	3	2	75	21
10	318.7	41,238	129.4	..	..	..	..	1	7	5	4	2	78	17
11	252.6	21,659	85.7	..	..	..	..	....	6	6	3	4	45	16
12	663.1	29,262	44.1	1	..	1	..	....	5	4	5	4	53	18
13	230.3	30,091	130.7	..	..	..	..	....	1	2	3	....	38	8
14	282.6	33,329	117.9	..	..	..	1	1	5	1	4	....	37	13
15	244.8	35,887	146.6	1	..	..	..	....	5	5	3	2	45	16
16	244.8	68,244	278.7	..	..	1	3	3	6	5	9	2	65	27
17	823.3	70,346	85.5	..	..	1	..	3	11	6	8	2	103	27
18	873.0	35,708	40.9	..	..	..	1	1	7	5	8	....	57	17
19	413.8	44,860	108.4	..	..	..	..	1	7	5	2	1	50	15
20	461.4	27,463	59.5	..	..	..	..	....	5	2	4	2	52	16
21	483.2	78,741	163.0	..	..	1	1	1	7	3	8	3	88	22
22	1,361.6	81,283	59.7	..	..	..	..	1	9	8	5	5	121	20
23	736.0	65,561	89.1	..	..	..	..	1	11	5	2	3	97	12
24	1,198.5	80,466	67.2	..	..	1	..	1	12	7	4	....	86	14
25	567.8	63,597	112.0	..	..	..	..	5	8	6	2	....	77	13
26	3,590.2	177,963	49.5	3	..	3	3	10	21	10	12	3	195	55
27	400.7	76,000	189.6	..	..	..	..	1	9	7	7	2	74	18
28	884.4	77,451	87.6	..	..	1	1	3	6	5	4	4	106	23
29	3,800.0	72,351	19.0	2	..	..	..	1	14	5	3	2	96	18
30	5,401.1	76,406	14.1	..	..	3	..	3	6	5	6	2	103	20
31	6,312.3	30,988	4.9	..	..	..	..	1	4	5	3	6	61	17
32	5,479.5	17,419	3.2	..	..	1	..	1	5	....	....	2	21	3
Total.	38,977.8	1,634,508	41.9	8	..	25	14	42	246	146	154	65	2,258	560

BOROUGH OF QUEENS.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	4,650.0	61,763	13.3	1	..	..	2	1	2	3	2	18	84	34
2	14,700.0	105,219	7.2	..	..	..	..	3	12	5	10	23	144	61
3	22,000.0	37,171	1.7	..	..	..	..	2	6	..	2	5	66	17
4	36,600.0	67,412	1.8	..	..	..	..	1	17	..	1	19	97	28
5	3,770.0	12,476	3.3	..	..	..	..	..	2	1	..	4	33	6
Total..	81,720.0	284,041	3.5	1	..	..	2	7	39	9	15	69	424	146

BOROUGH OF RICHMOND.

Wards	Area in Acres	Population U. S. Census 1910	Number of Persons to the Acre	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Diphtheria and Croup	Pulmonary Tuberculosis	Lobar Pneumonia	Broncho-Pneumonia	Diarrhoeal Diseases	All Causes	Deaths of Children Under 5 Years
1	3,340.0	27,201	8.1	..	..	..	..	..	2	2	..	5	42	7
2	4,130.0	16,871	4.1	..	..	..	..	1	12	..	..	3	37	10
3	10,050.0	19,812	2.0	..	..	..	..	..	2	..	..	3	32	9
4	8,180.0	10,662	1.3	..	..	..	..	..	2	1	..	5	21	6
5	10,900.0	11,423	1.0	..	..	..	..	..	3	1	1	..	14	5
Total..	36,600.0	85,969	2.3	..	..	..	..	1	21	4	1	16	146	37

INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, during Months ending Oct. 31, 1913, and Oct. 31, 1914.

	Manhattan		The Bronx		Brooklyn		Queens		Richmond		City	
	1913	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913	1914
Typhoid Fever	422	154	33	57	145	96	28	21	3	9	631	337
Smallpox	1	0	0	0	0	0	0	0	0	0	1	0
Measles	223	185	35	33	117	61	8	42	1	3	384	324
Scarlet Fever	153	131	26	45	116	142	11	45	7	27	313	390
Whooping Cough	70	207	22	28	61	85	10	8	21	8	184	336
Diphtheria	407	523	92	193	351	424	44	115	24	16	918	1,271
Leprosy	0	0	0	0	0	0	0	0	0	0	0	0
Mumps	30	74	1	5	30	56	1	1	1	1	63	137
German Measles	10	7	3	0	7	4	0	0	0	0	20	11
Chickenpox	70	173	16	26	97	67	10	15	4	34	197	315
Glanders	0	0	0	0	0	0	0	0	0	0	0	0
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0
Rabies	0	0	0	0	0	0	0	0	0	0	0	0
Tetanus	0	0	0	0	0	0	0	0	0	0	0	0
Tuberculosis	989	1,038	211	177	469	559	89	79	15	14	1,773	1,867
Syphilis	852	1,513	55	155	110	344	18	50	6	29	1,041	2,091
Gonorrhoea	67	38	2	1	7	10	1	0	0	3	77	52
Chancroid	596	736	17	59	75	153	4	8	0	6	692	962
Cerebro-Spinal Meningitis	12	14	3	3	4	5	1	1	0	0	20	23
Poliomyelitis	25	13	9	4	12	1	2	0	0	0	48	18
Typhus Fever	0	5	0	0	0	0	0	0	0	0	0	5
Pellagra	0	0	0	0	0	0	0	0	0	0	0	0
Trichinosis	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,927	4,811	525	786	1,601	2,007	227	385	82	150	6,362	8,139

MONTHLY METEOROLOGICAL SUMMARY.

NOVEMBER, 1914.

Day	Temperature Degrees Fahrenheit			Moisture			Wind			Actual Hours Sunshine
	Max.	Min.	Mean	Relative Humidity	Depth in Inches		Av'ge H'rly Vel. Miles	Prevailing Direct'n	Max. Vel. Miles	
					Rain	Snow				
S 1	69	49	59	45	0	0	7.0	SW	12 SW	10.4
M 2	65	47	56	59	.10	0	10.3	SW	22 NW	5.4
T 3	59	41	50	60	0	0	7.0	NW	12 NW	10.2
W 4	76	52	64	50	0	0	8.7	SW	18 SW	6.2
T 5	58	46	52	45	0	0	10.9	W	20 W	5.5
F 6	50	42	46	58	0	0	10.1	W	18 NW	6.1
S 7	54	38	46	62	...	0	6.2	S	15 S	6.5
S 8	61	38	50	65	.11	0	6.5	NW	16 NW	2.6
M 9	41	33	37	57	.01	0	9.4	N	15 N	4.3
T 10	44	27	36	43	0	0	7.3	N	13 S	10.1
W 11	58	40	49	52	0	0	8.9	SW	16 SW	6.8
T 12	53	40	46	46	0	0	6.5	W	13 NW	9.8
F 13	66	48	57	41	0	0	10.1	S	19 W	7.2
S 14	55	42	48	47	0	0	6.7	NW	14 NW	8.1
S 15	61	45	53	86	1.71	0	10.2	E	20 SE	.0
M 16	62	35	48	72	.29	0	11.1	W	23 NW	0.9
T 17	39	30	34	47	0	0	13.4	W	26 W	8.3
W 18	33	25	29	47	0	0	5.8	NW	13 W	5.8
T 19	41	32	36	88	1.07	0	7.0	N	16 W	.0
F 20	42	31	36	69	.02	0	12.3	NW	24 NW	2.1
S 21	36	26	31	47	0	0	11.1	W	17 W	9.5
S 22	42	31	36	48	0	0	8.0	SW	18 SW	1.2
M 23	36	23	30	54	0	0	11.0	NW	23 W	9.0
T 24	38	22	30	56	0	0	8.0	SW	15 S	9.6
W 25	52	34	43	54	0	0	9.8	SW	16 SW	4.5
T 26	61	45	53	49	0	0	11.0	SW	18 SW	6.2
F 27	60	40	50	56	0	0	11.2	SW	16 NW	.0
S 28	44	33	38	42	0	0	5.3	N	11 N	9.5
S 29	49	34	42	70	0	0	4.2	NE	7 NE	7.5
M 30	49	43	46	87	...	0	6.0	NE	9 NE	.0
Month Mean	51.8	37.1	44.4	56 8	Total 3.31	Total 0	8.7	Prevailing SW	Maximum 24 NW	Total 173.3

NOTE—In rain column † stands for melted snow water.

DIRECTORY OF THE DEPARTMENT OF HEALTH.

OFFICES.

Headquarters, S. W. corner Centre and Walker Streets, Manhattan.

Telephone—6280 Franklin.

Borough of The Bronx....3731 Third Avenue.....Telephone 1975 Tremont.
Borough of Brooklyn.....Flatbush Ave. and Willoughby St...Telephone 4720 Main.
Borough of Queens.....372-374 Fulton St., Jamaica, L. I....Telephone 1200 Jamaica.
Borough of Richmond.....514-516 Bay St., Stapleton, S. I....Telephone 440 Tompkinsville.

Office Hours—9 a. m. to 5 p. m. Saturdays, 9 a. m. to 12 m.

HOSPITALS FOR CONTAGIOUS DISEASES.

Manhattan.

Willard Parker Hospital. Foot of East 16th Street. Telephone 1600 Stuyvesant.

The Bronx.

Riverside Hospital. North Brother Island. Telephone 4000 Melrose.

Brooklyn.

Kingston Avenue Hospital. Kingston Ave. and Fenimore St. Tel. 4400 Flatbush.

LABORATORIES.

Diagnosis Laboratory, Centre and Walker Streets. Telephone, 6280 Franklin.
Serological Laboratory, Centre and Walker Streets. Telephone, 6280 Franklin.
Research Laboratory. **Chemical Laboratory.**
Vaccine Laboratory. **Drug Laboratory.**
Foot of East Sixteenth Street. Telephone 1600 Stuyvesant.

INFANTS' MILK STATIONS.

Manhattan.

1. 172 East 3d Street
2. 513 East 11th Street
3. 281 Avenue A
4. 240 East 28th Street
5. 225 East 107th Street
6. 241 East 40th Street
7. 174 Eldridge Street
8. Vanderbilt Clinic
9. 326 East 11th Street
10. 114 Thompson Street
11. 315 East 112th Street
12. 244 Mulberry Street
13. 508 West 47th Street
14. 78 Ninth Avenue
15. 421 East 74th Street
16. 205 East 96th Street
17. 209 Stanton Street
18. 2287 First Avenue
19. 108 Cherry Street
20. 122 Mulberry Street
21. 27 Suffolk Street
22. 73 Cannon Street
23. 110 Suffolk Street
24. 96 Monroe Street
25. 251 Monroe Street
26. 289 Tenth Avenue
27. 74 Allen Street

Brooklyn.

1. 268 South 2d Street
2. 660 Fourth Avenue
3. 208 Hoyt Street
4. 176 Hudson Avenue
5. 2346 Pacific Street
6. 184 Fourth Avenue
7. 359 Manhattan Avenue
8. 49 Carroll Street
9. 69 Johnson Avenue
10. 233 Suydam Street
11. 329 Osborne Street
12. 126 Dupont Street
13. 651 Manhattan Avenue
14. 185 Bedford Avenue
15. 296 Bushwick Avenue
16. 994 Flushing Avenue
17. 176 Nassau Street
18. 129 Osborn Street
19. 698 Henry Street
20. 552 Sutter Avenue
21. 167 Hopkins Street
22. 604 Park Avenue
23. 239 Graham Avenue
24. 49 Amboy Street

The Bronx.

1. 511 East 149th Street
2. 1354 Webster Avenue.

Queens.

1. 114 Fulton Avenue, Astoria, L. I.

Richmond.

1. 689 Bay Street, Stapleton, S. I.

CLINICS FOR SCHOOL CHILDREN

Hours: 2–5 p. m. Saturdays, 9–12 m.

Manhattan—

Gouverneur Slip.....Refraction eye work only.
Pleasant Ave. and 118th St....Refraction eye work. Nose and throat clinic, including operation. Trachoma operative treatment.
164 Second Ave.....Dental work only.
449 East 121st St.....Dental work and treatment of contagious eye disease.
P. S. 144, Hester and Allen Sts.Clinic and classes for chronic contagious eye diseases.
P. S. 21, 222 Mott St.....Clinic and classes for chronic contagious eye diseases.

CLINICS FOR SCHOOL CHILDREN—Continued

The Bronx—

580 East 169th St.....Nose and throat clinic including operative treatment. Treatment of contagious eye disease. Refraction eye work. Dental work.

Brooklyn—

330 Throop Ave.....Nose and throat clinic including operative treatment. Treatment of contagious eye disease. Refraction eye work. Dental work.

1249 Herkimer St.....Nose and throat clinic including operative treatment. Contagious eye disease treatment. Refraction eye work. Dental work.

145 Lawrence St.....Nose and throat clinic including operative treatment. Contagious eye disease treatment. Refraction eye work. Dental work.

Richmond—

689 Bay St., Stapleton.....Dental work only.

DIAGNOSTIC CLINICS FOR VENEREAL DISEASES.

Manhattan.

Centre and Walker Streets. Week days, 9 to 10 a. m.

307 West 33d Street. Wednesdays, 8 to 9 p. m.

Brooklyn.

29 Third Avenue. Week days, 9 to 11 a. m. Tuesdays and Fridays, 8 to 9 p. m.

CLINICS FOR THE PASTEUR TREATMENT FOR THE PREVENTION OF RABIES.

Manhattan.

Center and Walker Streets. Week days, 1 to 4 p. m.

Brooklyn.

29 Third Avenue. Week days, 10 a. m. to 1 p. m.

The Bronx—Third Avenue and St. Paul's Place. Week days, 11 a. m. to 1 p. m.

Queens—Patients attend Brooklyn or Manhattan Clinic.

Richmond—Patients attend Manhattan Clinic.

On Sundays and Holidays patients of all Boroughs attend the Brooklyn Clinic. Hours on these days, 10 a. m. to 12 noon.

TUBERCULOSIS CLINICS.

Manhattan.

West Side Clinic, 307 West 33d Street. Telephone 3471 Murray Hill.

Lower East Side Clinic, 111 East 10th Street.

Middle East Side Clinic, 229 East 57th Street.

Harlem Italian Clinic, 420 East 116th Street. Telephone 237 5 Harlem.

Southern Italian Clinic, 22 Vandam Street. Telephone 412 Spring.

Day Camp, Ferryboat "Middletown," foot East 91st Street. Telephone 2957 Lenox.

The Bronx.

Northern Clinic, St. Pauls Place and 3d Avenue. Telephone 1975 Tremont.

Southern Clinic, 493 East 139th Street. Telephone 5702 Melrose.

Brooklyn.

Main Clinic, Fleet and Willoughby Streets. Telephone 4720 Main.

Germantown Clinic, 55 Sumner Avenue. Telephone 3228 Williamsburg.

Brownsville Clinic, 64 Pennsylvania Avenue. Telephone 2732 E. N. Y.

Eastern Dist. Clinic. 306 S. 5th Street, Williamsburg. Telephone 1293 Williamsburg.

Bay Ridge Clinic, 215 60th Street. Telephone 2434 Sunset.

Parkville Clinic, 974 West Street. Telephone 1866 Bath Beach.

Day Camp, Ferryboat "Rutherford," foot of Fulton Street. Telephone 1530 Main.

Queens.

Jamaica Clinic, 10 Union Avenue, Jamaica. Telephone 1386 Jamaica.

Flushing, 110 Broadway, Flushing. Telephone, 731 Flushing.

Richmond.

Richmond Clinic, Bay and Elizabeth Streets, Stapleton. Telephone 1558 Tompkins.

SANATORIUM FOR TUBERCULOSIS.

OTISVILLE, ORANGE COUNTY, N. Y. (via Erie Railroad from Jersey City). Telephone 13 Otisville.

TUBERCULOSIS HOSPITAL ADMISSION BUREAU.

Maintained by the Department of Health, the Department of Public Charities, and Bellevue and Allied Hospitals, 426 First Avenue. Telephone 8667 Madison Square. Hours 9 a. m. to 5 p. m.

. NATHAN, 241-245 WEST 37TH ST., N. Y. 402L-14-2,000 (N)